



TRANSPORT STATEMENT

Wrexham Industrial Estate – Site 4
Wrexham, Clwyd

Client: FI Real Estate Management



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1 INTRODUCTION

1.1 Purpose of Report

- 1.1.1 This Transport Statement (TS) considers the highways and transportation implications associated with the development of land within Wrexham Industrial Estate (WIE) to provide 11 industrial units of B1/B2, totalling 35,198sqft of floorspace with associated parking. This scheme is part of a major re-development of WIE. The re-development comprises of this development, referred to as 'site 4', as well as 3 other developments, namely 'site 2', 'site 3' and 'site 5'. The other re-development proposals are located on similarly vacant land at various locations within the estate and are subject to separate planning applications.
- 1.1.2 Wrexham County Borough Council (WCBC) is the Local Highway Authority and the Local Planning Authority (LPA) for the area. Prime Transport Planning ('Prime') has produced this TS on behalf of the applicant, FI Real Estate Management ('FIREM').
- 1.1.3 The document has been prepared in accordance with the UK Government's Planning Practice Guidance: Transport Evidence Bases in Plan Making (October 2014) and Travel Plans, Transport Assessments and Statements in Decision-Taking (March 2014) as well as the Department for Transport's (DfT) Guidance on Transport Assessment (GTA) (March 2007). It considers the accessibility of the site and safety for all modes of travel with an emphasis on walking, cycling and public transport, while assessing the potential impact on the highway network.
- 1.1.4 The conclusions and recommendations contained herein have been drawn based on information available and obtained in advance of the planning submission to which this report relates.
- 1.1.5 Reasonable checks have been carried out on any third-party information used in the preparation of this report but, nonetheless, Prime accepts no liability for the accuracy or otherwise of this data.
- 1.1.6 Third-party rights are excluded for the use of information contained within this report.

1.2 Scope of Report

- 1.2.1 As stated above this document has been prepared in accordance with DfT GTA which, it is noted, was withdrawn from circulation on the 22nd October 2014. The www.gov.uk website states that the document has been archived and superseded by 'Transport Evidence Bases in Plan Making.'
- 1.2.2 The new document is not a like-for-like replacement for GTA, providing no guidance on the production of Transport Statements to accompany developments. The latest guidance instead helps local planning authorities assess strategic transport needs to reflect and, where appropriate, mitigate these in their Local Plan.

- 1.2.3 More relevant information is provided within the PPG under ‘Travel Plans, Transport Assessments and Statements in Decision-Taking’ however this also does not provide the level of detailed guidance that was contained within DfT’s GTA. This report therefore follows the generally accepted structure and methodology that GTA suggested.
- 1.2.4 A **Technical Note (TN)** has been produced and submitted in support of this **TS**. The **TN** discusses the methodology and analysis of the traffic impact of this proposed development together with the other 3 development proposals contained within WIE mentioned above. This **TN** can be seen within **Appendix A** of this **TS**.
- 1.2.5 Prime met with WCBC for an initial pre-application meeting on the 4th May 2018. Following this an e-mail based scoping exercise has been undertaken with WCBC, and an initial scoping note highlighting the proposed methodology was submitted to the highways officers at WCBC on 22nd May 2018. An email response has been received from WCBC on 29th May 2018. The full scoping discussions are contained in **Appendix B**.
- 1.2.6 The remainder of this report is structured as follows:
- Section 2 describes the relevant local and national transport policy and guidance;
 - Section 3 describes the existing situation in terms of the site, local highway network and traffic conditions whilst also reviewing the five-year accident records for the local highway network;
 - Section 4 details the development proposal including the access strategy and parking arrangements;
 - Section 5 details access to the site by sustainable modes of travel which includes walking, cycling and public transport and provides a summary of the Travel Plan;
 - Section 6 impact assessment detailed within **TN**
 - Section 7 concludes the findings of the Transport Statement.

2 TRANSPORT POLICY AND GUIDANCE

2.1 Introduction

- 2.1.1 It is important that any new developments conform to and compliment national and local planning policy. This section details the policies that are relevant to this development.

2.2 Planning Policy Wales

- 2.2.1 The document Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government and is supported by a series of Technical Advice Notes (TANs). The most recent version of PPW is Edition 9, published in November 2016.

- 2.2.2 Transport is considered in detail in Chapter 8 of PPW. The document sets out the aim of *‘extending choice in transport and securing accessibility in a way which supports sustainable development and helps to tackle the causes of climate change’*. The document states that this will be done by *‘encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel and minimising the need to travel’*.

- 2.2.3 The document states that land use planning can help to achieve the above aims in the following ways:

- Reducing the need to travel, especially by private car, by locating development where there is good access by walking, cycling and public transport;
- Locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;
- Improving accessibility by walking, cycling and public transport;
- Ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;
- Promoting walking and cycling;
- Supporting the provision of high-quality public transport;
- Supporting traffic management measures;
- Promoting sustainable transport options for freight and commerce;
- Supporting sustainable travel options in rural areas;
- Supporting necessary infrastructure improvements; and
- Ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.

- 2.2.4 The document sets out requirements that LPAs should take on when considering a development that has transport implications. These are:

- The impacts of the proposed development on travel demand;
- The level and nature of public transport provision;

- Accessibility by a range of different transport modes;
- The opportunities to promote active travel journeys, and secure new and improved active travel routes and related facilities, in accordance with the provisions of the Active Travel (Wales) Act 2013;
- The willingness of a developer to promote travel by walking, cycling or public transport, or to provide infrastructure or measures to manage traffic, to overcome transport objections to the proposed development (payment for such measures will not, however, justify granting planning permission to a development for which it would not otherwise be granted);
- The environmental impact of both transport infrastructure and the traffic generated (with an emphasis on minimising the causes of climate change associated with transport); and
- The effects on the safety and convenience of other users of the transport network.

2.2.5 Accordingly, this TS has been structured to include consideration of: accessibility by sustainable modes, including walking, cycling and public transport; road safety; and the impacts of the development on the local highway network.

2.3 Technical Advice Note 18: Transport

2.3.1 Chapter 8 of PPW is supplemented by Technical Advice Note (TAN) 18 which provides detailed guidance on implementing the transport objectives contained in PPW Chapter 8.

2.3.2 TAN 18 outlines the need for, and the required content of TA's, for some classifications and scales of development in Wales. The document outlines the following aims to be considered when producing a TA:

- Understand the transport impacts of the development;
- Clearly communicate the impacts to assist the decision-making process;
- Demonstrate the development is sited in a location that will produce a desired and predicted output (for example in terms of target modal split);
- Mitigate negative transport impacts through the design process and secure through planning conditions or obligations; and
- Maximise the accessibility of the development by non-car mode

2.3.3 TAN 18 provides detailed guidance on visibility standards, and essentially provides for visibility to be based upon the standards in Design Manual for Roads and Bridges (DMRB) for roads where actual road speeds are unknown or where the speed limit is >60kph (37mph), and the standards in Manual for Streets (MfS) where speeds are known and are <60kph (37mph). Visibility at the proposed site access is considered within Section 4 of this TS.

2.3.4 In relation to accessibility, TAN 18 emphasises the utility of using '*accessibility profiles*', which consider whether a site has the potential to minimise travel by the private car. In accordance with this, GIS

software has been utilised to generate accessibility isochrones for walking and cycling trips, while the site's accessibility by public transport has been considered in the context of timetabled services in the area.

- 2.3.5 TAN 18 goes on to outline the requirement for a "Transport Implementation Strategy" (TIS) to be produced as an output of the TA. The document summarises the requirements of the TIS as follows:

"[The TIS] should set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them. The TIS should set a framework for monitoring the objectives and targets, including the future modal split of transport to development sites."

- 2.3.6 In relation to how a TIS interfaces with the production of a TA and TS, the guidance states that:

"TISs resulting from the TA process are intended to incorporate all the components of a travel plan and ensure these are integrated with design elements of the new development."

- 2.3.7 In the light of the above, a TIS is included within the contents of the Framework TP which has been produced to accompany this TS, and draws upon the findings and conclusions of this TS, in addition to the potential sustainable travel measures described within the TP.

2.4 North Wales Joint Local Transport Plan 2015

- 2.4.1 The North Wales Joint Local Transport Plan (LTP) was jointly prepared by the North Wales Local Authorities in response to the Welsh Government requirement for LTPs to be submitted by the end of January 2015. The LTP's stated 'vision' is to 'remove barriers by delivering safe, sustainable, affordable and effective transport networks'.

- 2.4.2 The LTP aims to address the key issues for North Wales:

- The ability of the strategic road and rail corridors to provide the necessary good connectivity, for people and freight, within North Wales, to the ports and to the rest of the UK to support the economy and jobs, including tourism;
- The lack of resilience of the road and rail networks to planned and unplanned events including extreme weather;
- The need for good access to and between the three Enterprise Zones in North Wales;
- The lack of viable and affordable alternatives to the car to access key employment sites and other services; and
- The need for good road links to / from the trunk road network into the rural areas to help retain the viability of local businesses and support the Welsh language and culture.

- 2.4.3 This Plan therefore provides the strategic baseline for considering developments that have a transportation element within the wider area. In terms of the proposed residential units within this application, consideration will be made of the wider integration within the highways network and access by sustainable modes.

2.5 Wrexham Unitary Development Plan (1996-2011)

- 2.5.1 The Unitary Development Plan (UDP) 1996 - 2011 was adopted by WCBC on the 14th February 2005. The Plan covers the administrative area of the WCBC. It supersedes previous adopted development plans, namely the Wrexham Maelor Local Plan: Forward to 2001, the Glyndwr District Local Plan, and the Clwyd Structure Plan: First Alteration.

- 2.5.2 The document reflects the council's corporate vision for the County Borough's future based on:

- Aspiring city status, with Wrexham centre as its civic hub;
- Rural revitalised distinct towns and villages and attractive viable hinterland;
- Modern robust economy across all sectors;
- Improve quality of life for residents with an emphasis on supporting access to a variety of education and employment opportunities; and
- Institutions of growing stature: for example, the Council itself.

- 2.5.3 Part 1 of the strategic policies within this document outlines policy PS1, PS2, PS3, PS4. These policies outline the broad locations of where developments should be sought:

- **Policy PS1** New development for housing, employment, and community services will be directed to within defined settlement limits/employment areas;
- **Policy PS2** Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment;
- **Policy PS3** Development should use previously developed brownfield land comprising vacant, derelict or underused land in preference to the use of greenfield land, wherever possible, particularly so where greenfield land is of ecological, landscape or amenity value, or comprises agricultural land of grades 1, 2 or 3a quality; and
- **Policy PS4** Development should maintain the existing settlement pattern and character and be integrated with the existing transport network to help reduce the overall need to travel and encourage the use of alternatives to the car.

- 2.5.4 In addition to these, Policy PS5 outlines the need for housing provision between 1996 – 2011, with Policy PS8 outlining the development targets for transportation:

- **Policy PS5** Provision will be made for the development of 5775 dwellings between 1996 and 2011.
- **Policy PS8** The transport network will be developed by providing an integrated range of travel options to and from principal residential, commercial, employment and education centres by making the best use of the existing road and rail network, including, where necessary, the provision of facilities for both passenger and freight interchange and by the encouragement of public transport, cycling and walking.

2.5.5 It is noted that the Unitary Development Plan (1996-2011) is currently outdated, however, the Wrexham Local Development Plan 2 (2013-2028) is still undergoing consultation and is yet to be released. As such, the Unitary Development Plan (1996-2011), as the only document available, shall be used for reference when completing this Statement.

2.6 Wrexham Local Development Plan 2 (2013-2028)

2.6.1 Wrexham County Borough Council is preparing the Local Development Plan (LDP) which will replace the current adopted Unitary Development Plan. The LDP will be a long-term land use and development strategy focused on achieving sustainable development and will:

- guide development for housing, employment, retail and other uses;
- set out policies that will be used to decide planning applications; and
- safeguard areas of land requiring protection or enhancement

2.6.2 The LDP is due to be fully adopted as the statutory Development Plan for the LA in Spring 2019.

2.7 Local Planning Guidance Note 16- Parking Standard

2.7.1 This guidance note explains the parking standards the Council applies to new development. It amplifies Unitary Development Plan (UDP 1996-2011) policies and will be a material consideration in the determination of planning applications. This guidance note was revised by the Council in July 2011, subject to external consultation in September 2011 and was formally adopted for use by the Executive Board in November 2011.

2.7.2 The parking mix of the developments will be included within this document and addressed due to this report contributing towards a detailed application. It is noted through review of this document the parking standards required for these proposed land use. This can be seen below within **Figure 2.1**.

Figure 2.1 Parking Standards

Type of Development	Parking Standard	Cycle Parking Standard
B1 Business and light industry	1 car space per 30m ² gross floor space	1 cycle space per 300m ² gross floor space
B2 General Industry	1 car space per 50m ² gross floor space	1 cycle space per 500m ² gross floor space
B8 Storage and Distribution	1 car space per 100m ² gross floor space	1 cycle space per 1000m ² gross floor space
An area suitable for HGVs to load/unload and turn within the site will normally be required for B2 and B8 uses, particularly for sites accessed from a classified road. Any extensions to industrial or warehouse premises should not result in the loss of HGV loading/unloading/turning spaces unless an adequate alternative can be provided within the site.		

2.8 Wrexham Connected: Our Sustainable Urban Mobility Plan 2016

2.8.1 The Wrexham Connected document sets a clear vision for the future of transport for the area. It brings together the council's overall direction of transport planning.

2.8.2 The document outlines the importance of the councils Sustainable Urban Mobility Plan (SUMP). This is discussed in specific reference to WIE, and the councils concern for the public ability to connect in and around the town centre, as well as corridors outside of the town.

2.8.3 Stated within the document are the Wrexham Connected objectives, which are set to maximise how the council can contribute to the national well-being goals contained within the Future Generations Act, being that they support a cohesive Wales and more resilient Wales;

- **Safer Places** – working with partners to create safer environments for people to live, work and play;
- **Sustainable Places** – will embrace a 'sustainable', transport-first approach to new development;
- **Healthy Places** – reduce the impacts of air and noise pollution;
- **Affordable Places** – stimulate inwards investment and regeneration that leads to job creation; and
- **Well Connected Places** – enhance connectivity to, from and within Wrexham to improve the attractiveness and quality of the area.

2.9 Summary

2.9.1 This section has outlined national and local transport policies and guidance which are applicable to the development site. The production of this TA is consistent with the requirement for TAs set out in PPW, TAN 18 and the UDP for Wrexham. How the site conforms to and complements the other

policies and guidance described above is discussed in the following sections of this report, where relevant.

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3 EXISTING SITUATION

3.1 Site Description

- 3.1.1 The application site currently has no existing usage. The site is bounded to the west by Clywedog Road N, with Clywedog Road E to the south and existing industrial units to the east and north, with direct site frontage to the west onto Clywedog Road N also.
- 3.1.2 WIE is circa 3.5km east from Wrexham town centre, circa 4km north from Bangor-on-Dee and approximately 6km south west from Farndon.
- 3.1.3 The location of the site in the context of the current residential settlement and the local highway network, as well as the accident study area is illustrated in **Figure 1** in **Appendix C**

3.2 Local Highway Network

Bridge Road

- 3.2.1 Bridge Road is single carriageway, running a generally north east to south west alignment, with a circa 12m width. The road is subject to a 40mph speed limit with two 3-armed roundabouts being found in the vicinity of the site. One roundabout can be found at the junction of Clywedog Road E/Bridge Road S, the other located circa 100m south of Coed Aben Road, providing access to Spectrum Business Park.
- 3.2.2 Bridge Road is circa 530m in length, with an approximate 2m footway along its southern verge. A similar width footway exists along the north verge, separated from the carriageway by a section of grass verge, approximately 3m in width. A site visit was undertaken 4th May 2018, to which it was noted that street lighting is present. HMP Berwyn (which opened in 2017) takes access from this road.
- 3.2.3 Five bus stops exist along the length of Bridge Road. A north and south bound stop exist to the south of Coed Aben Road, circa 60m from the junction. The third stop is north bound and exists circa 140m to the south of the Bridge Road/Spectrum Business Park roundabout, with the 4th and 5th existing circa 50m north from the Clywedog Road S/Bridge Road/Bridge Road S roundabout, both north and southbound.
- 3.2.4 A pelican crossing exists slightly to the south of the 3rd bus stop, with double yellow lines along both the north bound and south bound verge to prevent on street parking. Dropped kerbs and tactile paving exist along the road and at the roundabouts to aid in pedestrian movements.

Bridge Road S

- 3.2.5 Bridge Road S is a continuation from Bridge Road and extends for approximately 800m southwards towards Cefn Road. Two 3-armed roundabouts exist along this stretch of road, with the first being circa 670m south from the Bridge Road roundabout, providing a continuation of Bridge Road S and a

connection to Clywedog Road S. The second 3-armed roundabout exists circa 140m further south from the above-mentioned roundabout, connecting to Cefn Road and Sesswick Way. Cefn Road provides a route through to Wrexham town centre and Sesswick Way through to the A525.

- 3.2.6 The road is single carriageway, approximately 8m in width and the majority is subject to a 30mph speed limit. A site visit was undertaken 4th May 2018, to which it was noted street lighting is present and a pedestrian cycle footway exists along the northern verge of road, circa 3m in width, with the southern verge of footway ceasing from the southern roundabout of Bridge Road. Similarly, to Bridge Road, double yellow lines exist along both the northbound and southbound verge to prevent on street parking.

- 3.2.7 The Maes Brenin/Pilgrim Way residential development takes two access points from Bridge Road S along its northern verge, with industrial units taking two access points from the southern verge. A north bound and south bound bus stop exist approximately 250m south of the roundabout with Bridge Road, called 'Pentre Maelor'.

Clywedog Road S

- 3.2.8 Clywedog Road S is a single carriageway road, running in a general north to south direction for circa 1200m. The northern section of Clywedog Road S meets with Clywedog Road N, and to the south the road meets with Bridge Road S at a 3-armed roundabout. Clywedog Road E meets at a priority junction with Clywedog Road S, 250m south from the junction with Clywedog Road N. The road is circa 8m in width, subject to a 40mph speed limit with a site visit undertaken 4th May 2018 confirming street lighting is present.

- 3.2.9 A continuous footway begins circa 400m north from the southern section of Clywedog Road S, running through to the junction with Clywedog Road N. The footway is circa 2m in width, and alternates between the eastern and western verges.

- 3.2.10 Numerous industrial buildings take access from Clywedog Road S, with a small business park also taking access from this road. No bus stops exist along this road, with the nearest being found along Bridge Road S.

Clywedog Road E

- 3.2.11 Clywedog Road E connects Bridge Road S with Clywedog Road S, running in a general north west to south east direction, this being circa 580m in length. To the north a priority junction connects to Clywedog Road S and to the south a 3-armed roundabout connects to Bridge Road S/Bridge Road. Clywedog Road N connects into Clywedog Road E circa 250m to the south of the junction with Clywedog Road S. The road is single carriageway, circa 8m in width, a site visit was undertaken 4th May 2018, to which it was noted street lighting is present and the road is subject to a 40mph speed limit.

- 3.2.12 Footways are provided along Clywedog Road E from its junction with Clywedog Road S to its junction with Clywedog Road S. Several industrial buildings take access from the road, north from the junction with Clywedog Road N.

Clywedog Road N

- 3.2.13 Clywedog Road N runs in an 'S' shape alignment, connecting to Clywedog Road E to the south, Coed Aben Road to the north, and meeting with Clywedog Road S at a priority junction midway along its length.
- 3.2.14 Site 4 is proposed to take access from Clywedog Road N, approximately 150m east from the junction with Clywedog road E. The frontage to the road is circa 180m.
- 3.2.15 Footway exists along the southern verge of carriageway and runs continuously from the Clywedog Road E junction through to Erlas Lane, with northern verge footway beginning approximately 300m north from Clywedog Rd E and running through the Abenbury Way/Coed Aben Road junction. Both footways are circa 2m in width, with the footway in the northern verge being separated from the main carriageway by a 1.5m grass verge. No bus stops exist along this road, with the nearest being Bridge Road S.

Coed Aben Road/Abenbury Way

- 3.2.16 Coed Aben Road passes through the centre of WIE. The road is approximately 670m in length and provides a connection between Bridge Road in the south and Clywedog Road N in the north. The road is circa 9m in width, has circa 2m footways in both verges, has street lighting and is subject to a 40mph speed limit.
- 3.2.17 Abenbury Way is the extension westwards of Coed Aben Road. This is circa 7m in width, has a footway in the southern verge only, has street lighting and is also subject to a 40mph speed limit.

3.3 Existing Traffic Conditions

- 3.3.1 As mentioned above, a site visit was undertaken on Friday 4th May 2018 during the AM peak period (7:30AM to 9:30AM). Traffic was observed to move freely throughout the Estate with no issues noted at the majority of the key junctions. Both the Cefn Road route and the A525 towards Wrexham (via Marchwiell) were also observed and both routes appeared quiet, with slightly more traffic on the more localised Cefn Road at the time of the site visit. From the site visit there would appear to be spare capacity on the highway network to accommodate additional development. No safety concerns with the operation of the existing highway network were noted during the site visit.
- 3.3.2 GTA suggests that an increase of 30 two-way trips is a useful point of reference regarding traffic impact at junctions, implying that any increase in trips less than this figure is unlikely to cause a detrimental impact. In absence of any more recent guidance as to when a capacity assessment is

required, this has been applied as an appropriate threshold as the basis for assessment. Therefore, a trip distribution exercise based on 2011 Census Method of Travel to Work (MTW) data was undertaken across ten junctions on the local highway network. These works and assessments are discussed in length within the **TN** included in Appendix A of this **TS**

3.3.3 As highlighted within this **TN**, it was deemed that surveys were required for the following junctions:

- Cefn Road/Sesswick way/Bridge Road S (Roundabout);
- Clywedog Road S/Bridge Road S (Roundabout);
- Clywedog Road E/Bridge Road S/Bridge Road/HMP Prison Berwyn (Roundabout);
- Clywedog Road S/Clywedog Road E (Priority);
- Bridge Road/Industrial Unit Access (Priority);
- Bridge Road/Spectrum Business Park (Roundabout);
- Bridge Road/Gourmet Café Access/Barclays Bank Access (Priority);
- Bridge Road/Coed Aben Road/Redwither Road (Priority);
- Bridge Road N/Redwith Road (Priority);
- Coed Aben Road/Retail Access (Priority);
- Clywedog Road E/Clywedog Road N (Priority);
- Clywedog Road N/Coed Aben Road (Priority)
- Abenbury Way/Ash Road N (priority); and
- Clywedog Road S/Clywedog Road N (Priority).

3.3.4 Classified turning counts were undertaken at the junctions listed above and indicated with the **TN**. The traffic surveys were undertaken by external traffic data collection specialist 360TSL Traffic Data Collection, on behalf of Prime.

3.3.5 The manual classified turning counts were undertaken on Tuesday 10th July 2018 and Tuesday 11th September 2018. A control survey was taken at priority junction Clywedog Road S and Clywedog Road E (surveyed on both survey periods) to ensure that the differing survey dates and respective data were comparable and obtained during similar conditions. The surveys were taken between the hours of 07:00 and 10:00 and 16:00 and 19:00 to ensure that the commuter peaks were surveyed allowing the morning (AM) and evening (PM) peak hours to be determined. A survey of queue lengths on the various approaches to the above junctions was also undertaken as part of these surveys.

- 3.3.6 The utilisation of the results of these surveys to ascertain the capacity of the site access and the above junctions, is described within the **TN** contained within **Appendix A** of this **TS**. Traffic Flow Diagrams have been produced from these survey result, these can also be found in the above-mentioned **TN**. The raw survey data informing the peak hour assessments can be provided, for information, upon request.

3.4 Road Safety

- 3.4.1 Personal injury accident data has been obtained from WCBC to cover the five-year period from 1st January 2012 and 31st December 2016, this being the latest data available at the time of our request. The information provided can be viewed within **Appendix D** of this report. The study area includes the southern section of WIE, this being Coed Aben Road, Bridge Road/Bridge Road S, Clywedog Road S/N/E and the roads associated with residential estate. The accident study area is shown in **Figure 1** in **Appendix C**.
- 3.4.2 In total there were 10 accidents, of which 4 were classed as serious and 6 were classed as slight. The annual breakdown of numbers and type of classification is shown in Table 3.2 below.

Table 3.2: Summary of Reported Personal Injury Accidents

Year	Severity			Total
	Slight	Serious	Fatal	
2012	1	-	-	1
2013	2	-	-	2
2014	1	2	-	3
2015	-	-	-	
2016	2	2	-	4
Total	6	4	-	10
Severity %	60%	40%	0%	100%

- 3.4.3 The accidents have been reviewed in relation to the relevant geographic locations to aid in the identification of any common causation factors across the highway network near to the site.

Clywedog Road S

- 3.4.4 Over the above-mentioned time period 3 accidents have occurred along Clywedog Road S, all of which have been classified as serious.
- 3.4.5 The first of these accidents occurred in 2016 during an afternoon in fine conditions. It is stated that a pedal cyclist was travelling along Clywedog Road S when they collided into the rear of an HGV. The vehicle was stationary at the side of the carriageway, to which the officer who attended stated that it was very likely the rider failed to look properly.
- 3.4.6 The second of these accidents also occurred in 2016, with fine conditions in daylight. It is stated that the driver of an HGV collided into the rear of a pedal cyclist. It is stated that it is very likely that the

driver of the vehicle was travelling too close to the rider, as well as the driver failing to look properly, resulting in a collision due to driving without due care and attention.

- 3.4.7 The third accident occurred in 2014, during the early evening in rain. The details state that a vehicle exited from a giveaway junction, onto Clywedog Road S and into the path of a motorcycle and a collision occurred. The officer who attended the scene stated that defective lights from the motorcycle may have been a contributory factor, as well as the driver of the vehicle failing to look properly.

Bridge Road/Bridge Road S

- 3.4.8 Over the above-mentioned time period 5 accidents have occurred along Bridge Road/Bridge Road S, all of which have been classified as slight.
- 3.4.9 The first of these accidents occurred in 2016, at the Bridge Road/Redwither Road junction, in daylight with fine weather conditions. The details state that a vehicle was waiting at this junction, when a light goods vehicle failed to stop in time and collided into the rear of the first. No officer attended the scene and as such no contributory factors have been stated.
- 3.4.10 The second accident occurred in 2013, circa 150m south from the Bridge Road/Redwither Road junction, in daylight with dry conditions. The details state that a rabbit had run into the carriageway, to which the driver had swerved and braked to avoid the animal and as a result collided with the kerb.
- 3.4.11 The third accident occurred in 2012 during daylight and in dry conditions. It is stated that a vehicle had slowed to allow a second vehicle to exit from a junction, to which a third vehicle travelling behind the first failed to stop and a collision occurred. The officer who attended the scene stated that it is possible the first vehicle may have braked suddenly, though it is very likely that the second vehicle was driving in a careless manner, too close to the first.
- 3.4.12 The fourth accident occurred in 2016 in daylight with dry conditions. The details state that a cyclist was travelling along the road when it collided head on with a motorcycle. No officer attended the scene, and as such no contributory factors have been identified.
- 3.4.13 The fifth accident occurred in 2014 during daylight and in dry conditions. The details state that a cyclist entered the first roundabout of Bridge Road S, upon doing so a vehicle had clipped the rear wheel of the cyclist causing the rider to fall to the ground. No officer attended the scene and as such no contributory factors have been identified.

Clywedog Road N/Abenbury Way

- 3.4.14 A total of two accidents occurred along Clywedog Road N/Abenbury Way, of which one was classed as serious and the other was classed as slight.

- 3.4.15 The first accident to occur on Clywedog Road N/Abenbury Way happened in 2014 during daylight hours in dry conditions and was classed as serious. The details state that a motorcycle was travelling Abenbury Way, when the rider performed a maneuverer to turn right onto Clywedog Road N. The rider, for an unknown reason, lost control and fell to the floor. The officer who attended the scene stated that a poor turn from the rider was a very likely cause for the accident.
- 3.4.16 The second accident to occur within this area was classed as slight and took place in 2013, with dry conditions in daylight, within the vicinity of the Ash Road N junction and Abenbury Way. The details state that that a vehicle was approaching the junction of Ash Road N, failing to stop in time for a second vehicle, and a collision occurred. The officer who attended the scene stated that it is likely the first vehicle was driving without due care and attention.

3.5 Summary

- 3.5.1 The above shows that within the agreed study area, there have been 10 injury accidents during the latest 5-year period from 1st January 2012 and 31st December 2016. The majority of these were slight in nature. The locations and severity proportions are not unusually high based on traffic flows, link and junction types; in addition, the causality of all the accidents appear to be down to driver / human error / misjudgement. No observations were made during the site visit that suggested highway condition or layout was unsafe.
- 3.5.2 From a review of the data provided, it is therefore concluded that there are no deficiencies in the existing highway network, or existing safety issues within the vicinity of the site, that would be exacerbated by the development proposals

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4 DEVELOPMENT PROPOSAL

4.1 Development Description

- 4.1.1 This document has been produced to accompany a planning application by FIREM to develop a currently vacant site to 11 industrial units of B1/B2, accumulating to 35,198sqft total floor area with associated parking, and space provided for a sheltered cycle storage and refuse store. The site is bounded to the west by Clywedog Road N, with Clywedog Road E to the south and existing industrial units to the east and north.
- 4.1.2 The site is proposed to be accessed from Clywedog Road N. A 26-metre diameter turning circle is provided within the northern section of the proposed site as well as directly on access to the site, with the industrial units themselves lining the eastern boundary. Associated parking for the site can be seen to the front of each unit. Parking for this site can be found to the front of each individual unit. The site is proposed to provide 72 parking spaces, including 11 disabled spaces.

4.2 Access Arrangement

- 4.2.1 Stated previously, the site is proposed to take access directly from Clywedog Road N along the site's western frontage. This will serve as the main access for both vehicles, pedestrians and cyclists.
- 4.2.2 The access will comprise of a 13.25m wide carriageway with a 13.5m southern kerb radii and a 14.25m northern kerb radii. These geometric parameters being robust enough to accommodate the largest vehicles which could utilise this access, i.e 16.5m long articulated HGV's. The future capacity for this site is discussed in detail within the **TN** contained within **Appendix A** of this report. Visibility splay of 4.5m x 120m is also to be provided the right on access in accordance with the wishes of the highway's officers at WCBC, this also being compliant with DMRB standards for the prevailing 40mph speed limit on the adjacent highway network. A 65m visibility splay is provided to the left on access to the Clywedog Road N junction with Clywedog Road E, this being in accordance to general DMRB guidance. The site access will further incorporate 2m footways, either side of the site access, providing a route to connect to existing footways along Clywedog Road N. The proposed access arrangements are depicted in **Drawing P18044-001B** contained with **Appendix E**.
- 4.2.3 To demonstrate that such an access will be safe and suitable to serve the site for larger vehicles, a swept path analysis using the industry approved AutoTrack software package has been undertaken for a 16.5m articulated HGV, the largest vehicle expected to regularly access the site. The swept path analysis has been illustrated in **Drawing P18044-002A** and **Drawing P18044-003** also in **Appendix E** which demonstrates that the vehicle can safely access and egress the site in forward gear.

4.3 Summary

- 4.3.1 The development is proposed to be served by 1 access point. It has been demonstrated that the site is able to accommodate all likely vehicle types which will regularly access the development.

5 ACCESS BY SUSTAINABLE MODES

5.1 Introduction

- 5.1.1 National and local transport planning policy centres on the importance of sustainable development, meaning that new developments should be located in areas where there is access to sustainable modes of travel, or where sustainable modes of travel can be introduced. These sustainable modes include walking, cycling, public transport, car sharing and use of low emission vehicles (electric/hybrid).
- 5.1.2 Walking, cycling and public transport are commonly regarded to be the most sustainable modes of transportation. This section of the report will describe how accessible the site is by these modes.

5.2 Access by Foot

- 5.2.1 As described in **Section 3** above, the site is proposed to take access from Clywedog Road N, along the approximate 180m frontage from the Clywedog Road E junction. The proposed site is currently vacant with no existing use, street lighting exists along the site frontage of Clywedog Rd N, with footway proposed east and west to adjoin to existing infrastructure.
- 5.2.2 Research has indicated that acceptable walking distances depend on several factors, including the quality of the street environment, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution of Highways and Transportation (CIHT) document entitled *Providing for Journeys on Foot* (2000) suggests walking distances which are relevant to this application. These distances are shown in **Table 5.1**.

Table 5.1: Suggested Acceptable Walking Distances

Criteria	Commuting (m)	Local Services (m)
Desirable	500	400
Acceptable	1000	800
Preferred Maximum	2000	1200

Source: CIHT Document 'Providing for Journeys on Foot' (2000)

- 5.2.3 Whilst **Table 5.1** provides useful guidance on walking distances, Manual for Streets provides a context for interpreting them. Manual for Streets states that:

'The propensity to walk is influenced not only by distance, but also by the quality of the walking experience. A 20-minute walk alongside a busy highway can seem endless, yet in a rich and stimulating street... it can pass without noticing.'

- 5.2.4 The accessibility for pedestrians to and from the site, in relation to Wrexham Industrial Estate, has been considered in the above context. **Figure 2 Appendix C** demonstrates the area which is realistically achievable to walk to and from the site, in accordance with the CIHT guidance.

- 5.2.5 Seen within **Figure 2 Appendix C**, the site is accessible by the vast majority of WIE, with only a handful of units falling outside of the 2000m walking range, this being the preferred CIHT maximum distance.
- 5.2.6 In addition, the existing amenities to the east of the site (local row of shops, Gourmet Café and Barclays bank), fall well within the walking range and can be easily accessed by the surrounding footways. The Maes Brenin/Pilgrim Way residential access to the south of the site falls within an approximate 850m walking range, this being within the 1000m acceptable commuting distance, seen within **Table 5.1**. The amenities associated with this residential area, i.e Post Office and Scallywags Day Nursery, are within a similar distance via the same route.
- 5.2.7 The local bus stops to WIE are further highlighted within **Figure 2 Appendix C**, as can be seen these bus stops fall within a 1200m walking distance, with the closest being the ‘Bridge Road’ stop, at a circa 540m walk from the site. The services provided by these bus stops are further detailed in **Section 5.3** below.
- 5.2.8 All footways, as described within **Section 3**, are of reasonable width and quality, with street lighting provided to aid in pedestrian movements and contribute towards a conducive walking environment. Noted however, that the route to the ‘Bridge Road’ bus stop may not be as suitable as other routes to further afield bus stops.
- 5.2.9 Given the evidence presented above, walking can be considered a realistic method of travel from the site to access the surrounding industrial, manufacturing and residential areas of Wrexham Industrial Estate, and vice versa.

5.3 Access by Cycle

- 5.3.1 It is widely recognised that cycling can offer an attractive alternative to short car trips, particularly those under 5km, and also as part of longer journeys by public transport.
- 5.3.2 The DfT’s Local Transport Note 2/08 Cycle Infrastructure Design states that:

‘The road is the most basic (and important) cycling facility available, and the preferred way of providing for cyclists is to create conditions on the carriageway where cyclists are content to use it, particularly in urban areas.’

- 5.3.3 In terms of cycling, there are both on-road and off-road/ traffic free cycle routes within WIE, these being highlighted in **Image 5.1** below. There is an on-road/ advisory cycle route running from the north, along the western side of WIE (depicted in pale yellow on **Image 5.1**) which runs via Erlas Lane, onto Redwither Lane leading south to Cefn Road. There is also an on-road / advisory route from Erlas Lane, via Clywedog Road South and Clywedog Road East towards Cefn Road and Cross Lanes. This route then meets with the traffic free route on Bridge Road South (shown in bright yellow, with dotted black edges in **Image 5.1**). On the eastern edge of WIE, there is a traffic free route on Byrn Lane which

leads to the roundabout junction of Bryn Lane and Abenbury Way to the west. This route then leads towards Borrás/ Acton to the north, towards Wrexham.

- 5.3.4 There were signposts to the on-road and traffic free routes observed during the site visit 2018, particularly around Clywedog Road South and East, nearby the residential dwellings of Maes Brenin/Pilgrim Way. In addition to the localised routes, there are a number of National Cycle Network Routes (NCNs) relatively close to WIE. Regional Route 70 is an on-road route, this being located circa 5km to the east of WIE. This links with NCN45 to the east of the site and continues northwards towards Chester and southwards towards Whitchurch and beyond.

Image 5.1: Cycling map / route from Sustrans Website



(SOURCE: <http://www.sustrans.org.uk>)

- 5.3.5 A cycling isochrone showing the site's catchment has also been produced using TRACC and is shown as **Figure 3 in Appendix C**. The figure illustrates 2000m and 5000m catchment ranges, which equate to 10-minute and 25-minute journey times respectively which are based on the somewhat conservative cycle speed of 12kph. Commuting cyclists are in fact more typically considered to travel at speeds between 15-20kph, so a greater catchment may be more realistic.
- 5.3.6 It is clear that the aforementioned Maes Brenin/Pilgrim Way residential site, local shops/cafe and industrial units of WIE listed in **Section 5.2** all fall within this first 2000m cycling range indicated within **Figure 3 of Appendix C**. Further to this, the southern and eastern sections of Wrexham also fall within the 5000m cycling range. This allows for the residential areas of Coed-Y-Glyn, Hightown, Rhosnesni, Acton and Wrexham Town Centre to become accessible to the site.
- 5.3.7 In addition to this the smaller residential village of Marchwiell falls within the 5000m cycling range, as well as Cross Lanes, and the smaller hamlets of Hugmore and Bowling Bank.

5.3.8 These residential areas then allow for additional amenities found within Wrexham and the surrounding area to be accessed from the site, including but not limited to a Co-op food store and an ATM cash point.

5.3.9 Due to the accessible location of the site, and the cycling infrastructure providing in close proximity to the site, it is considered that commuting to the site via cycling is a viable option for future employees and no additional off-site cycling measures are considered to be necessary.

5.4 Access by Public Transport

5.4.1 The CIHT document '*Planning for Public Transport in Developments*' (1999) recommends a walking distance of up to 400m to bus waiting facilities from new developments, which is equivalent to a five-minute walk based on approximately 1.4m/s walking speed.

5.4.2 The nearest bus stop is known as the 'Bridge Road' stop which provide services northbound towards Wrexham and around WIE. The bus stop is within the vicinity of other industrial and manufacturing units, circa 540m from the site. It is acknowledged that the bus stop is slightly outside of the recommended CIHT distance. It is further acknowledged that the route between the site and the bus stop does not consist of good quality footways for its entirety, however, this stop remains the closest by approximately 400m, as such it is deemed reasonable to assume staff would utilise this bus stop. The stop consists of a flagpole with some timetable information.

5.4.3 The services from these stops provide connections to/from WIE from Wrexham and the Brynteg areas. These services are summarised in **Table 5.2** below.

5.4.4 Timetabling information has been obtained from 'Traveline' with the timetables reference at the time of writing this report available on request. (<https://www.traveline.info/>).

Table 5.2: Summary of Bus Services from 'Bridge Road' stop

Bus Service	Route	Weekday Period	Weekend
			Sat
41a	<i>Wrexham – Redwither tower</i>	05:46 – 17:56 Approx. 1 service/hr	05:46-17:41 Approx. 1 service/hr
1E	<i>Darby Road shops (Brynteg) – Wrexham industrial Estate</i>	07:43 1 service	-

5.4.5 **Table 5.2** above demonstrates that the two services which operate from the nearest bus stop, provide a route around WIE to Wrexham and Brynteg. They are frequent with a service approximately every hour and would be a viable option for commuters and visitors to the proposed development proposals with the site being reached within a circa 20-minute journey time from Wrexham town centre from the 'Bridge Road' stop. **Appendix C Figure 4** visualises the journey time and areas served by these services for a typical Monday morning between 06:00 and 09:00.

- 5.4.6 In light of existing service times and frequencies, it is considered that existing bus services provide a realistic travel option for staff at the proposed development to travel to work during typical weekday working hours and also on a Saturday if it's a requirement for weekend working.
- 5.4.7 In respect of rail travel, Wrexham Railway Station can be reached as part of a multi-modal journey including the use of the above-mentioned bus services and a short walk from Wrexham Bus Station. This station provides access to a wider range of locations, with Cardiff Central, Holyhead, Bidston, Birmingham International, Shrewsbury, Chester and Manchester all having services from this station. The station provides twenty bicycle storage spaces with 68 car parking spaces also provided.
- 5.4.8 In summary, both bus and rail services, combined with walk / cycle as part of a multi modal commute are likely to provide a realistic travel option for commuters and visitors at the proposed development at both peak times and throughout the day.

5.5 Summary

- 5.5.1 This section of the report has demonstrated that the site is in a reasonably sustainable location where access to public transport is available and where local amenities fall within reasonable walking and cycling distances. The vast majority of WIE falls within a reasonable walking distance, indicating that the site itself is accessible within the local area and is commutable from the Maes Brenin/Pilgrim Way residential site. The local bus services provide connections both locally around WIE and towards Wrexham town centre at traditional working times and throughout the day, making bus travel a viable option to and from the proposed development. As such, the development proposals accord with the context and thinking as outlined in Wrexham Connected: Our Sustainable Urban Mobility Plan (2016) and the Wrexham Unitary Development Plan (1996-2011).
- 5.5.2 The PPW, at chapter 8, sets out the aim of '*extending choice in transport and securing accessibility*', in ways which '*supports sustainable development*'. The document states that these aims can be achieved in numerous ways, such as reducing the need to travel, locating developments near other related used to encourage multi-purpose trips and supporting sustainable travels options in rural areas. In light of the location of the site and the existing walking, cycling and public transport infrastructure it is considered that there are is good opportunity for access to the site by sustainable modes.

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6 IMPACT ASSESSMENT

6.1 Technical Note

- 6.1.1 The assessment for the cumulative traffic impact of site 2, site 3, site 4 and site 5 is discussed at length within the **TN**, as found within **Appendix A** of this report.

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7 SUMMARY AND CONCLUSION

- 7.1.1 This TS has been produced by Prime to consider the highways and transportation implications associated with a proposal by FIREM for 11 units of B1/B2, accumulating to 35,198sqft total floor area. The development is proposed on land off Clywedog Road N.
- 7.1.2 This document has been prepared in accordance with the Department for Transport's (DfT) Guidance on Transport Assessment (GTA) (March 2007) and Planning Practice Guidance. It considers the accessibility of the site and safety for all modes of travel from the private car to more sustainable modes such as walking, cycling and public transport.
- 7.1.3 The main vehicular access will be provided from the Clywedog Road E. The proposed footway will extend on to Clywedog Road E and connect to the existing provision along the southern verge. The main vehicular access point will also serve as access for cyclists. The proposed access strategy is shown in **Drawing 18044-001B** contained within **Appendix E**.
- 7.1.4 An assessment has been undertaken of the site's level of accessibility by sustainable modes, from which it can be concluded that realistic options exist for access to local residential area and amenities, on foot, by cycle and by public transport.
- 7.1.5 Occupiers of the proposed development will be made aware of the options available for sustainable modes of travel through the site's Travel Plan and also through Welcome Packs provided to employees at the development. The Welcome Packs would not only highlight the location of nearby services and how these are accessible on foot, cycle or public transport but also the distance and likely travel time to such destinations
- 7.1.6 An assessment of the capacity of the proposed site access has been undertaken within the **TN** contained within **Appendix A**, this confirming that the access will have ample capacity to accommodate the predicted traffic flows in 2023 and 2033 with the development in place.
- 7.1.7 The development traffic will also have a negligible impact on the surrounding highway network, in particular the junctions mentioned within **Section 3** and assessed within the **TN**.
- 7.1.8 A review of personal injury accidents that have occurred on the local highway network has been undertaken for the most recent five-year period that was available from WCBC. An analysis of those accidents showed that there does not appear to be a proliferation of accidents at any one location suggesting that highway safety is not an issue that would preclude the development of the site.

7.2 Conclusion

- 7.2.1 This report and the associated appendices conclude that that there are no highway safety concerns that would preclude the delivery of this development proposal, the site is accessible by a variety of

modes of transport and that the development would have a minimal impact on the operation of the surrounding highway network.

- 7.2.2 As the proposal complies with local and national planning policy and guidance with respect to sustainable accessibility, safety and impact on the highway network, there are no highways or transportation related reasons why planning permission should not be granted. Should the highway authority have any concerns, we are happy to consult further with them.

APPENDIX A

TECHNICAL NOTE

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Wrexham Industrial Estate

Technical Note

Wrexham Industrial Estate
Wrexham, Clwyd



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APPENDICES

Appendix I	Flow diagrams
Appendix II	TRICS Outputs
Appendix III	RTF Calculation
Appendix IV	Junction 9 Output

1 INTRODUCTION

1.1 Purpose of Report

- 1.1.1 This Technical Note (**TN**) considers the highway implications, in terms of junction capacity, associated with the trip generation and distribution of the 4 development sites (2, 3, 4 and 5) within Wrexham Industrial Estate (WIE). It forms part of, and should be read in accordance with, the Transport Statements (TS) for sites 2, 3, 4 and 5.
- 1.1.2 It should be noted that at the time of undertaking the junction capacity assessments, all sites were believed to be within their final design stage, and as such assessments were undertaken for the stated size of sites within **Section 3**. Since this assessment, site 4 has increased in area by 10sqm. Due to the marginal increase in size, and the additional capacity found to exist at the assessed junctions within WIE (discussed within **Section 4**), it is deemed that the below works remain valid.
- 1.1.3 The conclusions and recommendations contained herein have been drawn based on information available and obtained in advance of the planning submission to which this report relates.
- 1.1.4 Reasonable checks have been carried out on any third-party information used in the preparation of this report but, nonetheless, Prime Transport Planning accepts no liability for the accuracy or otherwise of this data.
- 1.1.5 Third party rights are excluded for the use of information contained within this report.

1.2 Scope of Report

- 1.2.1 This **TN** has been prepared in accordance with the correspondence undertaken with Wrexham County Borough Council (WCBC), with it being deemed appropriate to assess the highway capacity in a cumulative trip generation of all 4 sites.
- 1.2.2 Following this introduction, the remainder of this report is structured as follows:
- **Section 2** describes the existing traffic conditions
 - **Section 3** describes the trip generation and distribution of all 4 development sites as well as the forecasting methodology; and
 - **Section 4** describes the ability of the differing site accesses and local highway network to accommodate the additional generated traffic.
- 1.2.3 **Section 5** concludes the findings of the **TN**.

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2 EXISTING TRAFFIC CONDITIONS

2.1 Traffic Survey

- 2.1.1 Manual classified turning counts were undertaken on Tuesday 10th July 2018 and Tuesday 11th September 2018. A control survey was taken at priority junction Clywedog Road S/Clywedog Road E (surveyed on both survey periods) to ensure that the differing survey dates and respective data were comparable and obtained during similar conditions. The surveys were taken between the hours of 07:00 and 10:00 and 16:00 and 19:00 to ensure that the commuter peaks were surveyed allowing the morning (AM) and evening (PM) peak hours to be determined. A survey of queue lengths on the various approaches to the above junctions was also undertaken as part of this exercise.
- 2.1.2 The data was interrogated to derive the AM and PM peak hours of the local highway network which are found to be as follows:
- AM Peak: 07:45 – 08:45; and
 - PM Peak: 16:15 – 17:15
- 2.1.3 **Traffic Flow Diagrams 1 and 2**, included in **Appendix I**, summarise the observed peak hour traffic flows and queue lengths. In order to aid the capacity assessment modelling detailed in **Section 4**, the three user classes surveyed have been condensed into two, with buses added to the 'HGVs' user class. The queue length surveys recorded the maximum queue lengths every five minutes at the various junctions surveyed. Queues were measured as stationary and/or slow-moving traffic less than 5mph.

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3 TRIP GENERATION, FORECASTING AND DISTRIBUTION

3.1 Vehicular Trip Generation

- 3.1.1 In order to determine the traffic generation associated with the proposed developments, the TRICS 7.5.1 database has been used. This industry-standard database contains traffic generation surveys of numerous sites of various land use types across the UK and Eire.
- 3.1.2 Average trip rates have been derived by interrogating this database, deriving sample of sites with somewhat similar characteristics to the proposed development site. The report outputs for these trip rates, detailing the summary of the key selections applied in order to derive the samples for the sites can be viewed within **Appendix II**.
- 3.1.3 The derived trip rates were then applied to the differing sites, dependent upon the best suited land use, resulting in the trip generation, calculated hourly between the hours of 07:00 and 19:00. The estimated 12-hour trip generations of the sites are shown in **Table 3.1, 3.2, 3.3, 3.4 and 3.5** with the AM and PM peak hours highlighted in **bold font**.

Table 3.1: 12 Hour TRICS Derived Trip Rates and Trip Generation for 2,329sqm GFA – Site 2

Time	Average Vehicle Trip Rates			Average Vehicle Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.296	0.125	0.421	7	3	10
08:00-09:00	0.349	0.193	0.542	8	4	13
09:00-10:00	0.217	0.2	0.417	5	5	10
10:00-11:00	0.178	0.176	0.354	4	4	8
11:00-12:00	0.188	0.183	0.371	4	4	9
12:00-13:00	0.193	0.166	0.359	4	4	8
13:00-14:00	0.195	0.195	0.39	5	5	9
14:00-15:00	0.19	0.193	0.383	4	4	9
15:00-16:00	0.181	0.241	0.422	4	6	10
16:00-17:00	0.169	0.292	0.461	4	7	11
17:00-18:00	0.089	0.277	0.366	2	6	9
18:00-19:00	0.045	0.108	0.153	1	3	4
Daily (12hr)	2.833	2.722	5.555	66	63	129
Time	Average HGV Trip Rates			Average HGV Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
08:00-09:00	0.077	0.08	0.157	2	2	4
17:00-18:00	0.019	0.029	0.048	0	1	1

Table 3.2: 12 Hour TRICS Derived Trip Rates and Trip Generation for 4,188sqm GFA – Site 3

Time	Average Trip Rates			Average Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.296	0.125	0.421	12	5	18
08:00-09:00	0.349	0.193	0.542	15	8	23
09:00-10:00	0.217	0.2	0.417	9	8	17
10:00-11:00	0.178	0.176	0.354	7	7	15
11:00-12:00	0.188	0.183	0.371	8	8	16
12:00-13:00	0.193	0.166	0.359	8	7	15
13:00-14:00	0.195	0.195	0.39	8	8	16
14:00-15:00	0.19	0.193	0.383	8	8	16
15:00-16:00	0.181	0.241	0.422	8	10	18
16:00-17:00	0.169	0.292	0.461	7	12	19
17:00-18:00	0.089	0.277	0.366	4	12	15
18:00-19:00	0.045	0.108	0.153	2	5	6
Daily (12hr)	2.833	2.722	5.555	119	114	233
Time	Average HGV Trip Rates			Average HGV Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
08:00-09:00	0.077	0.08	0.157	3	3	7
17:00-18:00	0.019	0.029	0.048	1	1	2

Table 3.3: 12 Hour TRICS Derived Trip Rates and Trip Generation for 3,253sqm GFA – Site 4

Time	Average Trip Rates			Average Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.385	0.061	0.446	13	2	15
08:00-09:00	0.385	0.094	0.479	13	3	16
09:00-10:00	0.248	0.114	0.362	8	4	12
10:00-11:00	0.152	0.114	0.266	5	4	9
11:00-12:00	0.109	0.124	0.233	4	4	8
12:00-13:00	0.17	0.175	0.345	6	6	11
13:00-14:00	0.172	0.195	0.367	6	6	12
14:00-15:00	0.109	0.127	0.236	4	4	8
15:00-16:00	0.111	0.167	0.278	4	5	9
16:00-17:00	0.076	0.319	0.395	2	10	13
17:00-18:00	0.056	0.426	0.482	2	14	16
18:00-19:00	0.022	0.13	0.152	1	4	5
Daily (12hr)	2.293	2.089	4.382	75	68	143
Time	Average HGV Trip Rates			Average HGV Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
08:00-09:00	0.077	0.08	0.157	3	3	5
17:00-18:00	0.019	0.029	0.048	1	1	2

Table 3.4: 12 Hour TRICS Derived Trip Rates and Trip Generation for 6,502sqm GFA – Site 5 North

Time	Average Trip Rates			Average Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.296	0.125	0.421	19	8	27
08:00-09:00	0.349	0.193	0.542	23	13	35
09:00-10:00	0.217	0.2	0.417	14	13	27
10:00-11:00	0.178	0.176	0.354	12	11	23
11:00-12:00	0.188	0.183	0.371	12	12	24
12:00-13:00	0.193	0.166	0.359	13	11	23
13:00-14:00	0.195	0.195	0.39	13	13	25
14:00-15:00	0.19	0.193	0.383	12	13	25
15:00-16:00	0.181	0.241	0.422	12	16	27
16:00-17:00	0.169	0.292	0.461	11	19	30
17:00-18:00	0.089	0.277	0.366	6	18	24
18:00-19:00	0.045	0.108	0.153	3	7	10
Daily (12hr)	2.833	2.722	5.555	184	177	361
Time	Average HGV Trip Rates			Average HGV Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
08:00-09:00	0.077	0.08	0.157	5	5	10
17:00-18:00	0.019	0.029	0.048	1	2	3

Table 3.5: 12 Hour TRICS Derived Trip Rates and Trip Generation for 2,515qm GFA – Site 5 South

Time	Average Trip Rates			Average Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.385	0.061	0.446	10	2	11
08:00-09:00	0.385	0.094	0.479	10	2	12
09:00-10:00	0.248	0.114	0.362	6	3	9
10:00-11:00	0.152	0.114	0.266	4	3	7
11:00-12:00	0.109	0.124	0.233	3	3	6
12:00-13:00	0.17	0.175	0.345	4	4	9
13:00-14:00	0.172	0.195	0.367	4	5	9
14:00-15:00	0.109	0.127	0.236	3	3	6
15:00-16:00	0.111	0.167	0.278	3	4	7
16:00-17:00	0.076	0.319	0.395	2	8	10
17:00-18:00	0.056	0.426	0.482	1	11	12
18:00-19:00	0.022	0.13	0.152	1	3	4
Daily (12hr)	2.293	2.089	4.382	58	53	110
Time	Average HGV Trip Rates			Average HGV Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
08:00-09:00	0.077	0.08	0.157	2	2	4
17:00-18:00	0.019	0.029	0.048	0	1	1

3.1.4 As the above tables show, the sites cumulatively together are likely to generate in the region of **99** two-way trips in the AM peak hour and **88** trips in the PM peak hour. It should be noted that no allowance has been made for any future reduction in car travel based or any potential increased use of sustainable modes of travel, therefore the trip generation figures are considered to be robust.

3.2 Traffic Growth

- 3.2.1 Ordinarily, the assessment year is taken to be the year of application plus five years (2023), and it is expected that the site would be built-out and occupied by then. However, in accordance with WCBC scoping note comments, an assessment considering the application year plus 15 years has been requested. In accordance with this request, and to provide a robust assessment, the forecast year of assessment will be 2033.
- 3.2.2 The 2018 observed traffic flows, shown in **Traffic Flow Diagrams 1 and 2** in **Appendix I**, were factored to the assessment year using the DfT software TEMPro (Trip End Model Presentation Program) version 7.2. This package allows access to data used in the National Trip End Model (NTEM) and can be used to 'provide summaries of traffic growth using data from the National Transport Model (NTM)' (<https://www.gov.uk/government/collections/tempro>).
- 3.2.3 The latest version of the software provides traffic growth figures at the mid layer super output area (MSOA) level. In order to derive local traffic growth factors, the 'Wrexham 020' mid layer super output area (MSOA), which includes WIE as an area of employment, was selected. Trip end growth factors for car drivers were derived and adjusted by NTM dataset AF15 for 'rural' area types and 'principal' road types.
- 3.2.4 Before applying the traffic growth factors derived from the above methods, the jobs generated from the 4 development sites have been considered based on their Gross Floor Area (GFA) and the guidance provided within the 'Employment Density Guide 3rd edition (November 2015)' published by the Homes and Communities Agency.
- 3.2.5 As TEMPro includes government derived planning forecasts, it is necessary to manually adjust the planning assumptions within the database software to remove the number of jobs associated with the 4 development sites, which would otherwise result in double counting. The adjustment involved the removal of 277 jobs from the TEMPro zone between the base year (2018) and the forecast year (2033). A comparative summary of this reduction in the job assumptions is shown in **Table 3.6**.

Table 3.6: TEMPro Default and Alternative Planning Assumptions

Base Year	Forecast Year	Default Assumptions			Alternative Assumptions		
		Base Jobs	Future Jobs	Difference	Base Jobs	Future Jobs	Difference
2018	2033	16081	16716	635	16081	16439	358

- 3.2.6 The subsequent growth factors derived from the above are shown in **Table 3.7** below.

Table 3.7 TEMPro Growth Factors 2018-2033

Level	Area	Local Growth Figure	
		AM	PM
W02000420	Wrexham 020	1.1315	1.1311

3.2.7 The growth factors shown in **Table 3.7** above have been applied to the 2018 Observed light vehicle flows resulting in the 2033 Base flows and are shown in **Traffic Flow Diagrams 3 and 4**.

3.2.8 DfT derived Road Traffic Forecast (RTF) growth factors for the Wales region have been applied to heavy vehicles as TEMPro is not applicable to such vehicle classes as detailed in WebTAG guidance. The RTF calculation for heavy vehicles is provided in **Appendix III**.

3.2.9 The trips associated with the 4 developments are shown in **Traffic Flow Diagrams 6 and 13**, which have been added to the '2033 Base' flows to form the '2033 With Development' flows and are shown in **Traffic Flow Diagrams 16 and 17**.

3.3 Trip Distribution

3.3.1 Traffic generated by the development proposal has been distributed on to the highway network based on 2011 Census MTW data for car drivers using the Wrexham 020 MSOA, which contains the site as an area of workplace. Origin-destination pairs containing twenty trips or less were removed from the data, accounting for 12.18% of the total trips, to make the data more manageable and to eliminate less common and generally longer distance trips from the dataset.

3.3.2 The main commuter urban areas within each MSOA were identified and the most likely route from/to the site, referred to as the primary route. They were derived using web-based route planning software (Google Maps). Whilst some destinations may have more than one suitable route available, the most obvious routes (based on travel time and distance) have largely been chosen in order to concentrate the traffic forming a worst-case assessment, although where there are clear alternative routes due to an MSOA containing different trip attractors along different routes, secondary routes were identified.

3.3.3 Given that the 4 sites are located in different locations within WIE, the routes and junctions utilised will vary slightly. A route through the study area has been identified and is shown in **Table 3.8** with a summary of the percentage of development trips that will be distributed along each also shown. This split distribution has then been applied to each site individually.

Table 3.8: Distribution Summary

Route	Example Destination	Route %
1B, 2A, 3A, 4B	South East Wrexham	38.7%
1A, 5A, 6A, 7B	Rhosrobin	42.3%
1B, 2A, 3A, 4A	Marchwiel	19.0%
Total		100.0%

- 3.3.4 The distribution is shown diagrammatically in **Traffic Flow Diagram 5** with details of the distribution calculation and data provided in **Appendix IV**. The distributed development traffic is shown in **Traffic Flow Diagrams 6 and 15**.
- 3.3.5 These development trips have then been added to the '2033 Without Development' traffic flows and are shown in **Traffic Flow Diagrams 16 and 17**. These flows represent the '2033 With Development' scenario.

4 IMPACT ASSESSMENT

- 4.1.1 Having derived estimated traffic flows for the forecast year in the 'With' and 'Without Development' scenarios it is possible to compare expected traffic flows within the study area.
- 4.1.2 **Table 4.1** below provides a comparison of flows in the forecast year for the 'Without' and 'With Development' scenarios summarising the difference. This exercise has been carried out for each of the off-site junctions surveyed.

Table 4.1: Comparison of Two-way Traffic Flows through Study Area Junctions Without and With Development

Junction	2033 AM Peak				2033 PM Peak			
	Without Dev	With Dev	Abs Diff	% Diff	Without Dev	With Dev	Abs Diff	% Diff
1. Clywedog Rd E/Clywedog Rd S	463	494	31	6.7%	510	532	22	4.3%
2a. Clywedog Rd E/Clywedog Rd N	75	115	40	53.3%	72	103	31	43.1%
2b. Clywedog Rd E/Clywedog Rd E	55	73	18	32.7%	46	56	10	21.7%
3. Clywedog Rd S/Clywedog Rd N	527	576	49	9.3%	558	592	34	6.1%
4. Gourmet Café/Bridge Rd/Barclays	737	737	0	0.0%	841	841	0	0.0%
5. Bridge Rd/Spectrum Business Park	837	837	0	0.0%	960	960	0	0.0%
6. Industrial Access/Bridge Rd	663	663	0	0.0%	851	851	0	0.0%
7. Bridge Rd/Clywedog Rd E/HMP	751	791	40	5.3%	906	937	31	3.4%
8. Bridge Rd S/Clywedog Rd S	1155	1230	75	6.5%	1301	1359	58	4.5%
9. Sesswick Way/Bridge Rd S/Cefn Rd	1277	1355	78	6.1%	1402	1461	59	4.2%
10. Coed Aben Rd	437	437	0	0.0%	421	421	0	0.0%
11a. Bridge Rd N/Redwither Rd	319	319	0	0.0%	553	553	0	0.0%
11b. Bridge Rd/Redwither Rd/Coed Aben Rd	822	822	0	0%	717	717	0	0.0%
12a. Abenbury Way/Coed Aben Rd/Clywedog Rd N	962	1009	47	5%	786	820	34	4.3%

12b. Abenbury Way/Ash Rd	774	804	30	4%	675	686	11	1.6%
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4.1.3 The greatest impact of the developments in terms of percentage increase will be on the Clywedog Rd E/Clywedog Rd N junction, with an increase of 40 trips (53.3%) in the AM peak and 31 trips (43.1%) in the PM peak. The greatest increase in trips is seen on Sesswick Way/Bridge Rd S/Cefn Rd roundabout junction, with an increase in 78 trips in the AM peak and 59 in the PM peak.

4.1.4 The DfT *Guidance on Transport Assessment* (GTA) suggests that an increase of 30 two-way trips is a useful point of reference regarding traffic impact at junctions, implying that any increase in trips less than this figure is unlikely to cause a detrimental impact. In order to carry out a fully robust assessment of WIE, all the junctions listed above have been modelled in terms of capacity.

4.2 Junction Capacity Assessments

4.2.1 Industry standard software has been used to model the junctions, with Junctions 9 (version 9.0.2.5947). This software includes the PICADY module which is used to model priority-controlled junctions and crossroads junctions.

4.2.2 When interpreting the Junctions 9 results, the capacity of each arm or movement is calculated as the Ratio of Flow to Capacity (RFC) with 0.85 representing the practical capacity threshold of the arm and 1.00 representing the theoretical capacity threshold. It is above the practical capacity threshold where capacity problems can begin to occur while exceeding the theoretical capacity means that arms are over capacity.

4.2.3 Modelled queues are shown in passenger car units (PCUs), this being equivalent to a distance of 5.75m which is the length of road space (car length plus gap length) that a typical car occupies when queuing. In order to convert the traffic flows into PCUs, which is the requisite input flow unit required in the modelling software, a factor of 2.0 has been applied to the heavy vehicle user class. Cars have a factor of 1.0. These factors are commonly accepted in transport modelling.

4.2.4 The junction geometry has been coded based on a combination of OS mapping and aerial photography.

4.2.5 Traffic flows have been input based on the 'ONE HOUR' (ODTAB) option, which synthesises a 'peak within a peak' at the middle of the time period modelled and is generally seen as being the worst-case form of assessment in terms of impact.

4.2.6 All model report outputs are included in **Appendix IV**

4.2.7 The results of the capacity assessment for each of the junctions are described below. The site access has been assessed for the 'With Development' scenario only.

Clywedog Rd E/Clywedog Rd S (priority)

4.2.8 The results of the capacity assessment are summarised in **Table 4.2**.

Table 4.2: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Clywedog Road E (Left Turn)	0.02	0.0	0.08	0.1
Clywedog Road E (Right Turn)	0.02	0.0	0.05	0.1
Clywedog Road S (Southern Arm)	0.06	0.1	0.03	0.0
2033 Without Development				
Clywedog Road E (Left Turn)	0.02	0.0	0.09	0.1
Clywedog Road E (Right Turn)	0.02	0.0	0.05	0.1
Clywedog Road S (Southern Arm)	0.07	0.1	0.03	0.0
2033 With Development				
Clywedog Road E (Left Turn)	0.02	0.0	0.09	0.1
Clywedog Road E (Right Turn)	0.03	0.0	0.07	0.1
Clywedog Road S (Southern Arm)	0.07	0.1	0.03	0.0

4.2.9 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.09 on Clywedog Road E (Left Turn) in the PM peak.

Clywedog Rd E/Clywedog Rd N (priority)

4.2.10 The results of the capacity assessment are summarised in **Table 4.3**.

Table 4.3: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Clywedog Road N (Left Turn)	0.02	0.0	0.03	0.0
Clywedog Road N (Right Turn)	0.02	0.0	0.01	0.0
Clywedog Road E (Eastern Am)	0.03	0.0	0.01	0.0
2033 Without Development				
Clywedog Road N (Left Turn)	0.02	0.0	0.04	0.0
Clywedog Road N (Right Turn)	0.02	0.0	0.02	0.0
Clywedog Road E (Eastern Am)	0.03	0.0	0.01	0.0
2033 With Development				
Clywedog Road N (Left Turn)	0.04	0.1	0.06	0.1
Clywedog Road N (Right Turn)	0.02	0.0	0.02	0.0
Clywedog Road E (Eastern Am)	0.06	0.1	0.02	0.0

4.2.11 The results show that the junction will continue to operate with spare capacity, with very low RFC values, with the highest RFC being 0.06 on Clywedog Road n (Left Turn) in the PM peak.

Clywedog Rd E/Clywedog Rd E (priority)

4.2.12 The results of the capacity assessment are summarised in **Table 4.4**

Table 4.4: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Clywedog Road E	0.01	0.0	0.02	0.0
Clywedog Road E (Western Arm)	0.02	0.0	0.00	0.0
2033 Without Development				
Clywedog Road E	0.01	0.0	0.02	0.0
Clywedog Road E (Western Arm)	0.02	0.0	0.00	0.0
2033 With Development				
Clywedog Road E	0.01	0.0	0.02	0.0
Clywedog Road E (Western Arm)	0.02	0.0	0.00	0.0

- 4.2.13 The results show that the junction will comfortably continue, to operate with ample spare capacity - the highest RFC being 0.02 on both arms in both peaks.

Clywedog Rd S/Clywedog Rd N (priority)

- 4.2.14 The results of the capacity assessment are summarised in **Table 4.5**

Table 4.5: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Clywedog Road S (Left Turn)	0.39	0.7	0.33	0.5
Clywedog Road S (Right Turn)	0.04	0.0	0.01	0.0
Clywedog Road N (Western Arm)	0.31	0.5	0.41	0.7
2033 Without Development				
Clywedog Road S (Left Turn)	0.43	0.8	0.37	0.6
Clywedog Road S (Right Turn)	0.05	0.1	0.02	0.0
Clywedog Road N (Western Arm)	0.35	0.6	0.46	0.9
2033 With Development				
Clywedog Road S (Left Turn)	0.46	0.9	0.40	0.7
Clywedog Road S (Right Turn)	0.05	0.1	0.02	0.0
Clywedog Road N (Western Arm)	0.39	0.7	0.48	1.0

- 4.2.15 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.48 on Clywedog Road N (Western Arm) in the PM peak.

Gourmet Café/Bridge Rd/Barclays (priority)

4.2.16 The results of the capacity assessment are summarised in **Table 4.6**

Table 4.6: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Barclays Bank Access	0.00	0.0	0.00	0.0
Bridge Road (Northern Arm)	0.01	0.0	0.00	0.0
Gourmet Access	0.00	0.0	0.00	0.0
Bridge Road (Southern Arm)	0.00	0.0	0.00	0.0
2033 Without Development				
Barclays Bank Access	0.00	0.0	0.00	0.0
Bridge Road (Northern Arm)	0.01	0.0	0.00	0.0
Gourmet Access	0.00	0.0	0.00	0.0
Bridge Road (Southern Arm)	0.00	0.0	0.00	0.0
2033 With Development				
Barclays Bank Access	0.00	0.0	0.00	0.0
Bridge Road (Northern Arm)	0.01	0.0	0.00	0.0
Gourmet Access	0.00	0.0	0.00	0.0
Bridge Road (Southern Arm)	0.00	0.0	0.00	0.0

4.2.17 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.01 on Bridge Road (Northern Arm) in the PM peak. Minimal trips are associated with the Gourmet Café, or Barclays Bank, during peak times.

Bridge Rd/Spectrum Business Park (roundabout)

4.2.18 The results of the capacity assessment are summarised in **Table 4.7**

Table 4.7: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
1 - Bridge Road (Northern Arm)	0.22	0.3	0.28	0.4
2 - Spectrum Business Park	0.03	0.0	0.16	0.2
3 - Bridge Road (Southern Arm)	0.27	0.4	0.16	0.2
2033 Without Development				
1 - Bridge Road (Northern Arm)	0.25	0.4	0.32	0.5
2 - Spectrum Business Park	0.03	0.0	0.19	0.2
3 - Bridge Road (Southern Arm)	0.30	0.5	0.18	0.2
2033 With Development				
1 - Bridge Road (Northern Arm)	0.25	0.4	0.32	0.5
2 - Spectrum Business Park	0.03	0.0	0.19	0.2
3 - Bridge Road (Southern Arm)	0.30	0.5	0.18	0.2

4.2.19 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.32 on Bridge Road (Northern Arm) in the AM peak.

Bridge Road/Industrial Access (priority)

4.2.20 The results of the capacity assessment are summarised in **Table 4.8**

Table 4.8: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Industrial Access (Left Turn)	0.03	0.0	0.02	0.0
Industrial Access (Right Turn)	0.01	0.0	0.10	0.1
Bridge Road (Northern Arm)	0.04	0.1	0.02	0.0
2033 Without Development				
Industrial Access (Left Turn)	0.03	0.0	0.02	0.0
Industrial Access (Right Turn)	0.01	0.0	0.12	0.1
Bridge Road (Northern Arm)	0.05	0.1	0.02	0.0
2033 With Development				
Industrial Access (Left Turn)	0.03	0.0	0.02	0.0
Industrial Access (Right Turn)	0.01	0.0	0.12	0.1
Bridge Road (Northern Arm)	0.05	0.1	0.02	0.0

4.2.21 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.12 on the Industrial Access (Right Turn) in the PM peak.

Bridge Road/HMP/Clywedog Rd E (roundabout)

4.2.22 The results of the capacity assessment are summarised in **Table 4.9**

Table 4.9: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
1 - Bridge Road (Northern Arm)	0.14	0.2	0.34	0.5
2 - HMP	0.01	0.0	0.08	0.1
3 - Bridge Road (Southern Arm)	0.29	0.4	0.11	0.1
4 - Clywedog Road E	0.03	0.0	0.04	0.0
2033 Without Development				
1 - Bridge Road (Northern Arm)	0.15	0.2	0.39	0.7
2 - HMP	0.01	0.0	0.10	0.1
3 - Bridge Road (Southern Arm)	0.32	0.5	0.12	0.2
4 - Clywedog Road E	0.03	0.0	0.04	0.1
2033 With Development				
1 - Bridge Road (Northern Arm)	0.15	0.2	0.39	0.7
2 - HMP	0.01	0.0	0.10	0.1
3 - Bridge Road (Southern Arm)	0.34	0.5	0.13	0.2
4 - Clywedog Road E	0.05	0.1	0.07	0.1

4.2.23 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.39 on Bridge Road (Northern Arm) in the PM peak.

Bridge Road S/Clywedog Rd S (roundabout)

4.2.24 The results of the capacity assessment are summarised in **Table 4.10**

Table 4.10: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
1 - Bridge Road S (Northern Arm)	0.15	0.2	0.47	0.9
2 - Bridge Road S (Southern Arm)	0.40	0.7	0.12	0.2
3 - Clywedog Road S	0.06	0.1	0.25	0.3
2033 Without Development				
1 - Bridge Road S (Northern Arm)	0.16	0.2	0.54	1.2
2 - Bridge Road S (Southern Arm)	0.45	0.8	0.14	0.2
3 - Clywedog Road S	0.06	0.1	0.28	0.4
2033 With Development				
1 - Bridge Road S (Northern Arm)	0.18	0.3	0.56	1.3
2 - Bridge Road S (Southern Arm)	0.48	1.0	0.15	0.2
3 - Clywedog Road S	0.08	0.1	0.30	0.4

4.2.25 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.56 on Bridge Road S (Southern Arm) in the PM peak.

Bridge Road S/Sesswick Way/Cefn Road (roundabout)

4.2.26 The results of the capacity assessment are summarised in **Table 4.11**

Table 4.11: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
1 - Bridge Road S	0.14	0.2	0.49	1.0
2 - Sesswick Way	0.31	0.5	0.13	0.2
3 - Cefn Road	0.35	0.6	0.12	0.1
2033 Without Development				
1 - Bridge Road S	0.16	0.2	0.56	1.3
2 - Sesswick Way	0.35	0.6	0.14	0.2
3 - Cefn Road	0.41	0.7	0.14	0.2
2033 With Development				
1 - Bridge Road S	0.18	0.3	0.58	1.4
2 - Sesswick Way	0.36	0.6	0.15	0.2
3 - Cefn Road	0.45	0.9	0.15	0.2

4.2.27 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.58 on Bridge Road S in the PM peak, with the highest AM peak being 0.45 on Cefn Road.

Coed Aben Rd/Retail Access (priority)

4.2.28 The results of the capacity assessment are summarised in **Table 4.12**

Table 4.12: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Retail Access	0.02	0.0	0.07	0.1
Coed Aben Road (Western Arm)	0.06	0.1	0.01	0.0
2033 Without Development				
Retail Access	0.02	0.0	0.08	0.1
Coed Aben Road (Western Arm)	0.07	0.1	0.01	0.0
2033 With Development				
Retail Access	0.02	0.0	0.08	0.1
Coed Aben Road (Western Arm)	0.07	0.1	0.01	0.0

4.2.29 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.08 on the Retail Access arm in the PM peak. Little traffic is associated with the Retail Access during peak times. It should be noted, that as a result of the development site locations within WIE and their trip distributions, no traffic is expected to pass the above junction, hence the same result achieved for '2033 With development' and '2033 Without Development'.

Bridge Road N/Redwither Road (priority)

4.2.30 The results of the capacity assessment are summarised in **Table 4.13**

Table 4.13: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Bridge Road N (Left Turn)	0.02	0.0	0.04	0.1
Bridge Road N (Right Turn)	0.15	0.2	0.51	1.0
Redwither Road (Eastern Arm)	0.02	0.0	0.01	0.0
2033 Without Development				
Bridge Road N (Left Turn)	0.02	0.0	0.05	0.1
Bridge Road N (Right Turn)	0.17	0.2	0.58	1.4
Redwither Road (Eastern Arm)	0.02	0.0	0.01	0.0
2033 With Development				
Bridge Road N (Left Turn)	0.02	0.0	0.05	0.1
Bridge Road N (Right Turn)	0.17	0.2	0.58	1.4
Redwither Road (Eastern Arm)	0.02	0.0	0.01	0.0

- 4.2.31 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.58 on Retail Access arm in the PM peak. It should be noted, that as a result of the development site locations within WIE and their trip distributions, no traffic is expected to pass the above junction, hence the same result achieved for '2033 With development' and '2033 Without Development'.

Bridge Road N/Coed Aben Road (priority)

- 4.2.32 The results of the capacity assessment are summarised in **Table 4.14**

Table 4.14: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Bridge Road	0.85	5.3	0.66	2.0
Coed Aben Road	0.31	0.5	0.14	0.2
2033 Without Development				
Bridge Road	0.98	14.0	0.75	3.0
Coed Aben Road	0.35	0.6	0.16	0.2
2033 With Development				
Bridge Road	0.98	14.0	0.75	3.0
Coed Aben Road	0.35	0.6	0.16	0.2

- 4.2.33 The results show that the junction is not operating over capacity, with the highest RFC being 0.98 on Bridge road in the AM peak. However, it should be noted, that this junction has been modelled on a worst-case scenario basis. Due to software limitations, the junction form has had to be simplified such that the dedicated lane from Bridge Road onto Coed Aben Road has not be included within the capacity assessment, thus it assumes there is less capacity than there is in reality. It should be noted, that as a result of the development site locations within WIE and their trip distributions, no traffic is expected to pass the above junction, hence the same results achieved for '2033 With development' and '2033 Without Development'.

Clywedog Road N/Abenbury Way (priority)

4.2.34 The results of the capacity assessment are summarised in **Table 4.15**

Table 4.15: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Clywedog Road N	0.40	0.7	0.39	0.7
Abenbury Way	0.38	0.7	0.26	0.4
2033 Without Development				
Clywedog Road N	0.46	0.9	0.45	0.9
Abenbury Way	0.43	0.8	0.29	0.5
2033 With Development				
Clywedog Road N	0.50	1.1	0.49	1.0
Abenbury Way	0.49	1.0	0.31	0.5

4.2.35 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.50 on Clywedog Road N in the AM peak.

Ash Road N/Abenbury Way (priority)

4.2.36 The results of the capacity assessment are summarised in **Table 4.16**

Table 4.16: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2018 Observed				
Ash Road N	0.15	0.2	0.24	0.3
Abenbury Way (Southern Arm)	0.04	0.0	0.07	0.1
2033 Without Development				
Ash Road N	0.18	0.3	0.27	0.4
Abenbury Way (Southern Arm)	0.05	0.1	0.07	0.1
2033 With Development				
Ash Road N	0.18	0.3	0.27	0.4
Abenbury Way (Southern Arm)	0.05	0.1	0.07	0.1

4.2.37 The results show that the junction will continue to operate with spare capacity, with the highest RFC being 0.27 on Ash Road N in the PM peak.

Site 2 Access (priority)

4.2.38 The results of the capacity assessment are summarised in **Table 4.17**

Table 4.17: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2033 With Development				
Site Access 2	0.01	0.0	0.02	0.0
Clywedog Road N (Eastern Arm)	0.01	0.0	0.00	0.0

4.2.39 The results show that the site access will continue to operate with spare capacity, with the highest RFC being 0.02 in the PM peak.

Site 3 Access (priority)

4.2.40 The results of the capacity assessment are summarised in **Table 4.18**

Table 4.18: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2033 With Development				
Site Access 3	0.03	0.0	0.03	0.0
Clywedog Road E (Western Arm)	0.01	0.0	0.00	0.0

4.2.41 The results show that the site access will continue to operate with spare capacity, with the highest RFC being 0.03 in both peaks.

Site 4 Access (priority)

4.2.42 The results of the capacity assessment are summarised in **Table 4.19**

Table 4.19: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2033 With Development				
Site Access 4	0.02	0.0	0.03	0.0
Clywedog Road N (Southern Arm)	0.02	0.0	0.00	0.0

- 4.2.43 The results show that the site access will continue to operate with spare capacity, with the highest RFC being 0.03 in the AM peak.

Site 5 Northern Access (priority)

- 4.2.44 The results of the capacity assessment are summarised in **Table 4.19**

Table 4.19: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2033 With Development				
Site Access 5B (N)	0.05	0.1	0.05	0.1
Clywedog Road S (Southern Arm)	0.05	0.1	0.02	0.0

- 4.2.45 The results show that the site access will continue to operate with spare capacity, with the highest RFC being 0.05 in both peaks.

Site 5 Southern Access (priority)

- 4.2.46 The results of the capacity assessment are summarised in **Table 4.20**

Table 4.20: Junction Capacity Assessment Results

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2033 With Development				
Site Access 5B (S)	0.01	0.0	0.03	0.0
Clywedog Road S (Southern Arm)	0.02	0.0	0.00	0.0

- 4.2.47 The results show that the site access will continue to operate with spare capacity, with the highest RFC being 0.03 in the PM peak.

4.3 Summary and Conclusion

- 4.3.1 This section has explained the traffic forecasting methodology and capacity assessment used to determine the suitability of the proposed site access and suitability of the surrounding highway network to accommodate the development proposal.
- 4.3.2 It has been demonstrated that the local highway network and proposed site access will operate within theoretical capacity and will therefore be able to accommodate the traffic likely to be generated by the development. The impact of the developments, when comparing the '2033 With Development' and the '2033 Without Development' scenario is negligible.

- 4.3.3 The impact of the development can certainly not be considered '**severe**' meaning that according to paragraph 109 of the NPPF, as described in **Section 2** of the TS, the development should therefore not be refused on transport grounds.

APPENDIX I

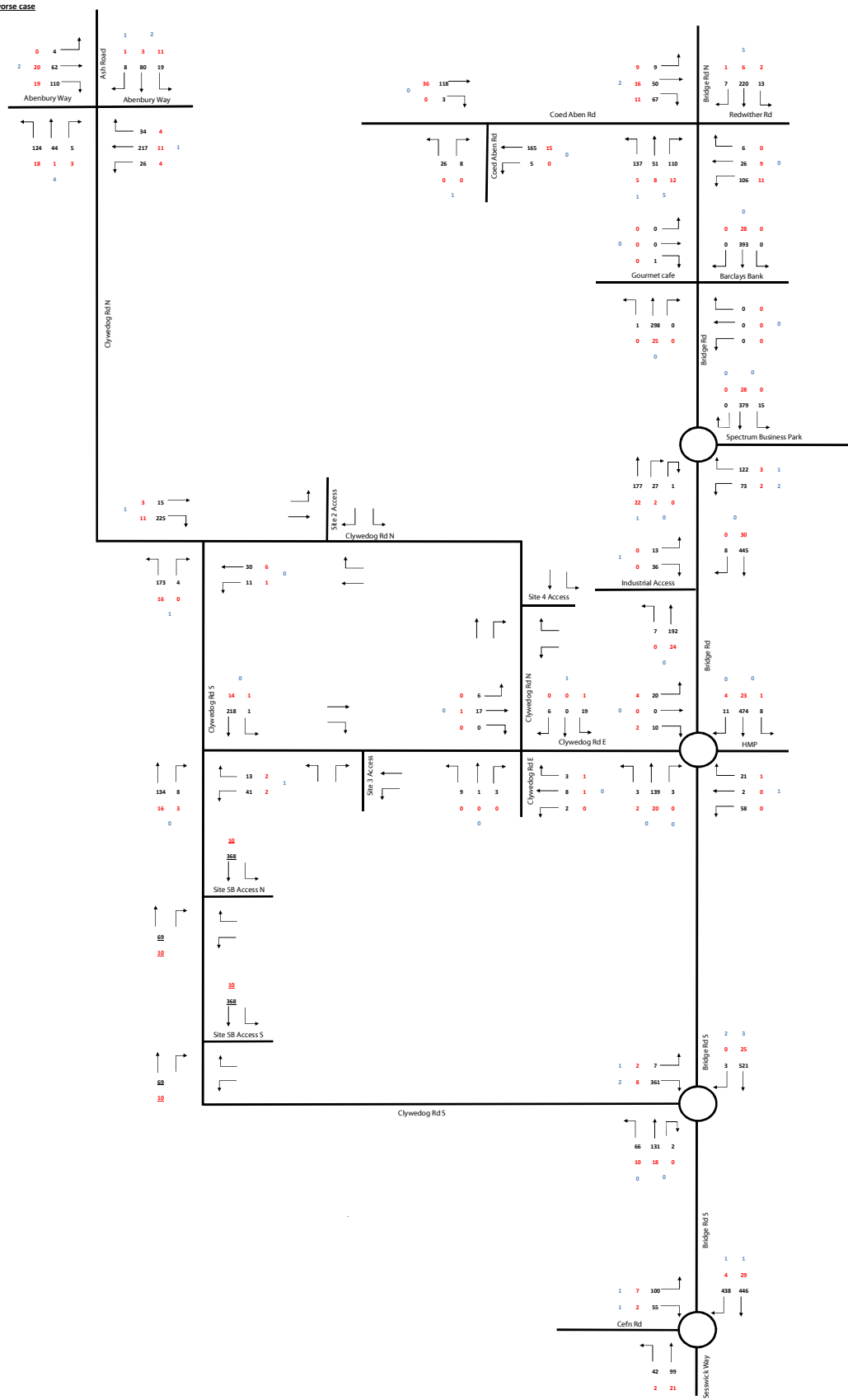
TRAFFIC FLOW DIAGRAMS

Traffic Flow Diagrams			
Reference	Scenario	Peak	Derivation
1	Traffic Flow Diagram 1 - 2018 Observed Flows	AM (0745-0845)	Raw Data
2	Traffic Flow Diagram 2 - 2018 Observed Flows	PM (1615-1715)	Raw Data
3	Traffic Flow Diagram 3 - 2033 Base	AM (0745-0845)	1*TEMPPro
4	Traffic Flow Diagram 4 - 2033 Base	PM (1615-1715)	2*TEMPPro
5	Traffic Flow Diagram 5 - Development Distribution	Both	MTW Census
6	Traffic Flow Diagram 6 - Site 2 Generated Traffic	AM (0745-0845)	5*TRICS
7	Traffic Flow Diagram 7 - Site 2 Generated Traffic	PM (1615-1715)	5*TRICS
8	Traffic Flow Diagram 8 - Site 3 Generated Traffic	AM (0745-0845)	5*TRICS
9	Traffic Flow Diagram 9 - Site 3 Generated Traffic	PM (1615-1715)	5*TRICS
10	Traffic Flow Diagram 10 - Site 4 Generated Traffic	AM (0745-0845)	5*TRICS
11	Traffic Flow Diagram 11 - Site 4 Generated Traffic	PM (1615-1715)	5*TRICS
12	Traffic Flow Diagram 12 - Site 5 Generated Traffic	AM (0745-0845)	5*TRICS
13	Traffic Flow Diagram 13 - Site 5 Generated Traffic	PM (1615-1715)	5*TRICS
14	Traffic Flow Diagram 14 - Total Dev	AM (0745-0845)	6+8+10+12
15	Traffic Flow Diagram 15 - Total Dev	PM (1615-1715)	7+9+11+13
16	Traffic Flow Diagram 16 - 2033 With Development	AM (0745-0845)	3+14
17	Traffic Flow Diagram 17 - 2033 With Development	PM (1615-1715)	4+15

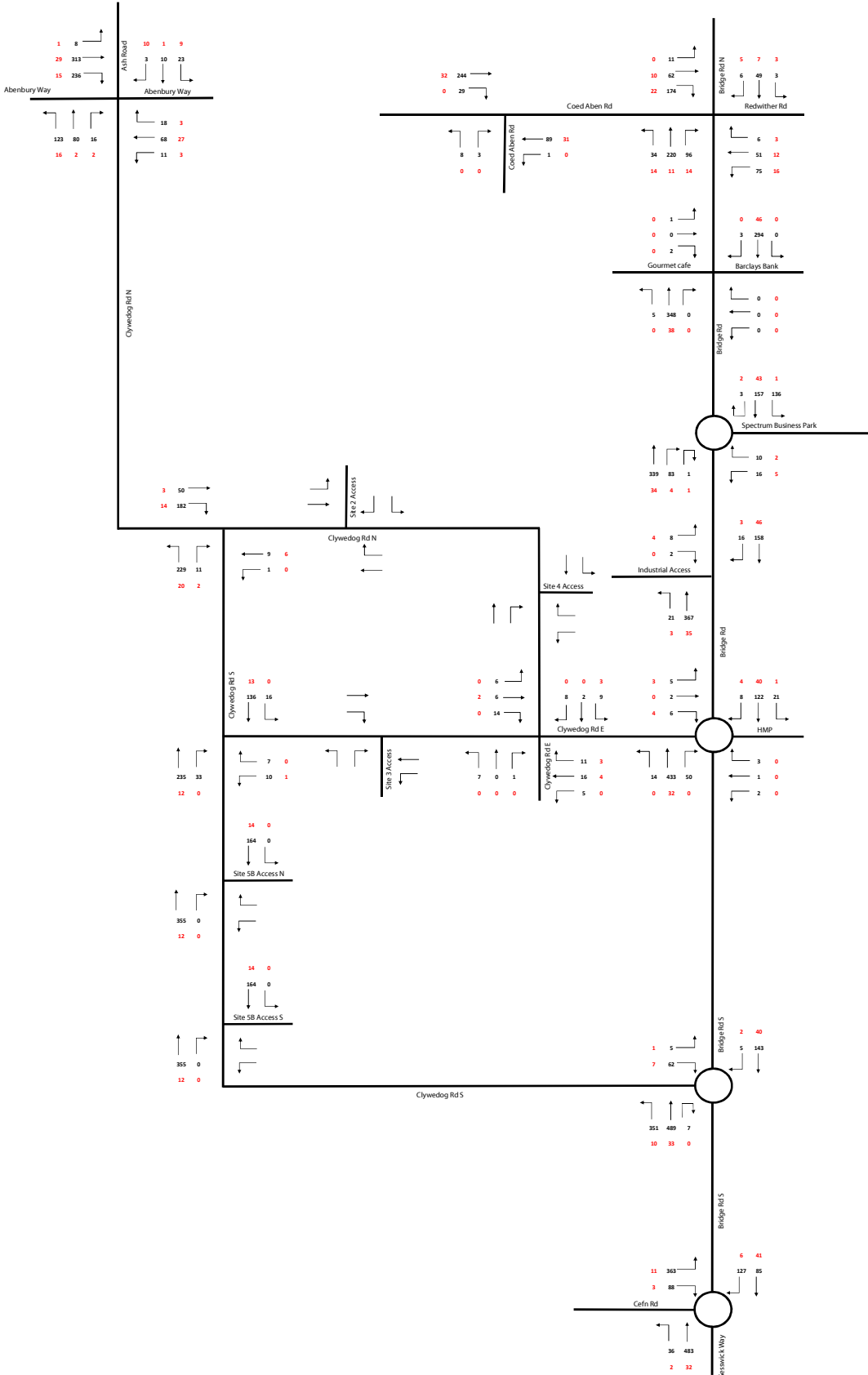
Interpolated flows assumed worse case



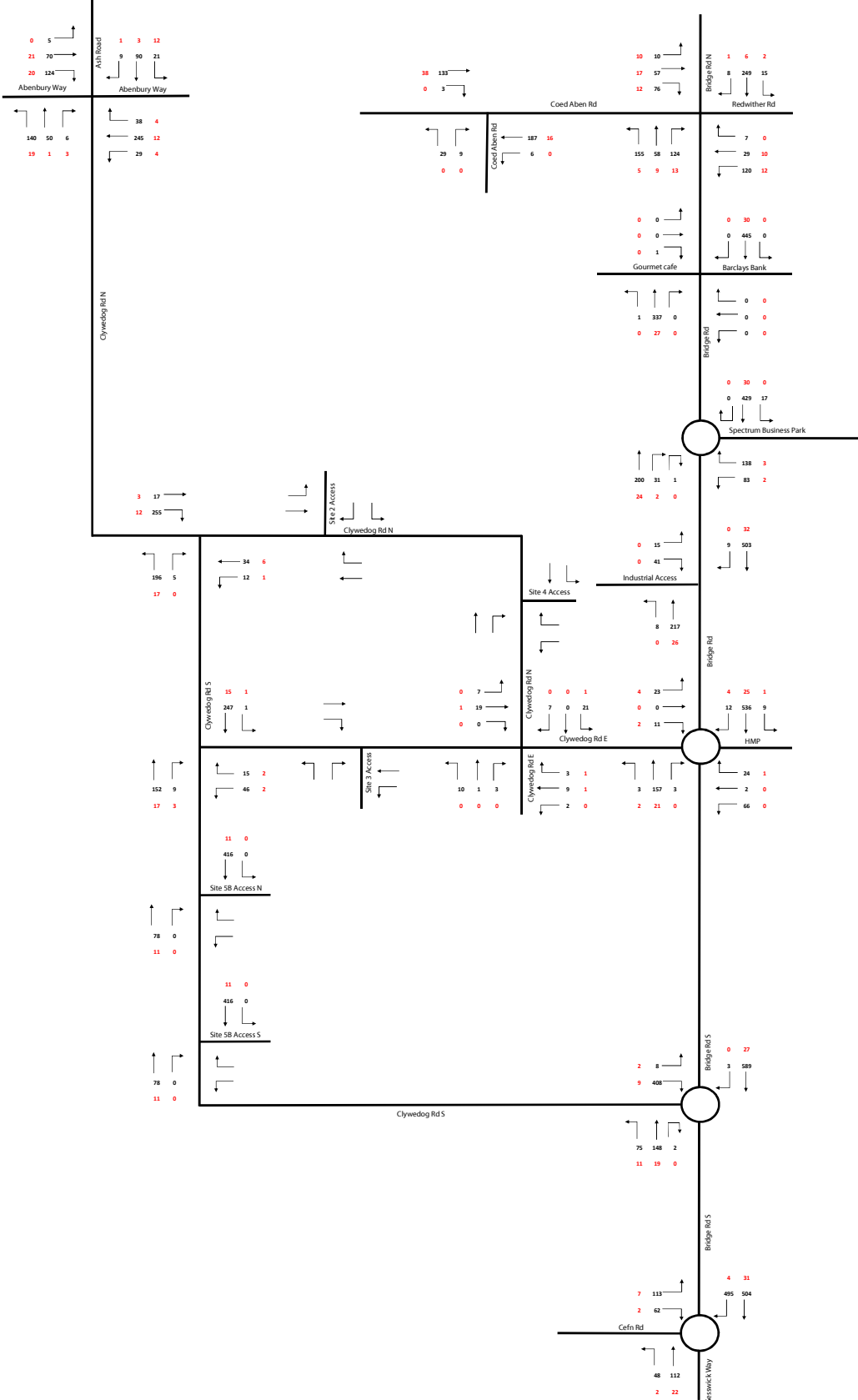
Light Vehicles (cars & LGVs) in black
Heavy Vehicles (HGVs & buses) in red
Observed queues in blue
Interpolated flows assumed worse case



Project:	Wrexham Industrial Estate
Scenario:	Traffic Flow Diagram 3 - 2033 Base
Peak	AM (0745-0845)
Notes:	All flows are in vehicles



Project:	Wrexham Industrial Estate
Scenario:	Traffic Flow Diagram 4 - 2033 Base
Peak	PM (1615-1715)
Notes:	All flows are in vehicles



Departures



Project:
Scenario:
Peak
Notes:

Wrexham Industrial Estate
Traffic Flow Diagram 6 - Site 2 Generated Traffic
Normal - standard vehicles

Arrivals
Departures

8
4

2
2

Any differences as a result of rounding

The diagram illustrates the traffic flow for Site 2 generated traffic within the Wrexham Industrial Estate. Key features include:

- Road Network:** The diagram shows a grid of roads including Abenbury Way, Cywedog Rd N, Cywedog Rd S, Cywedog Rd E, Bridge Rd, and Cefn Rd. It also shows connections to external roads like A11 Road, Coed Aben Rd, and Redwither Rd.
- Traffic Flow:** Arrows indicate the direction of traffic flow. Numbers (1, 2, 3, 4, 5) are placed near the flow arrows to represent vehicle counts.
- Site Access Points:** Specific access points are labeled, including Site 2 Access, Site 4 Access, Site 5B Access N, and Site 5B Access S.
- Vehicle Counts:** The diagram shows 8 arrivals and 4 departures. These are color-coded: blue for arrivals and red for departures.
- Local Landmarks:** The diagram also shows the locations of a Gourmet cafe, Barclays Bank, Spectrum Business Park, and HMP.

Project:
Scenario:
Peak
Notes:

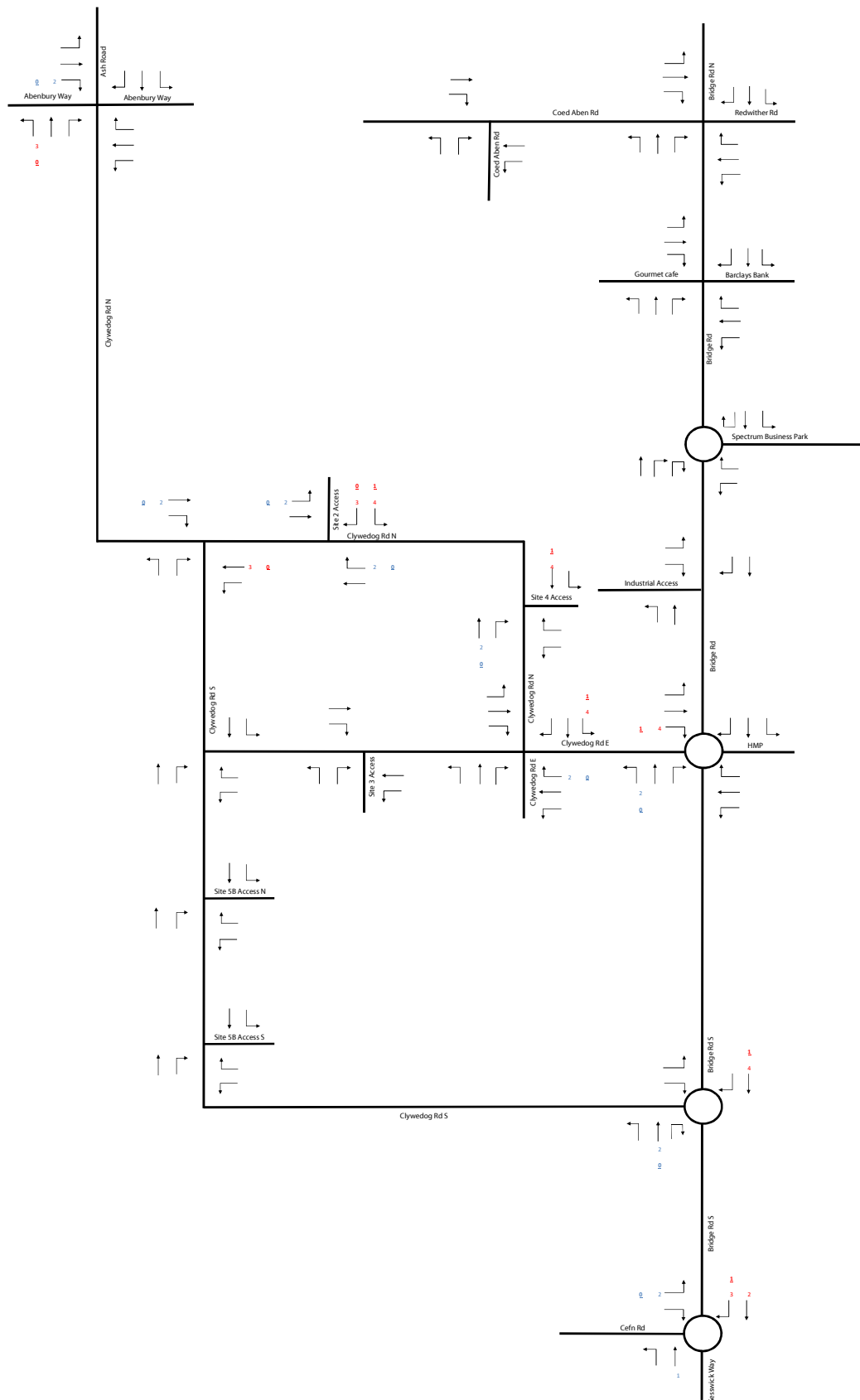
Wrexham Industrial Estate
Traffic Flow Diagram 7 - Site 2 Generated Traffic
Normal - standard vehicles

Arrivals
Departures

4
7

0
1

Any differences as a result of rounding



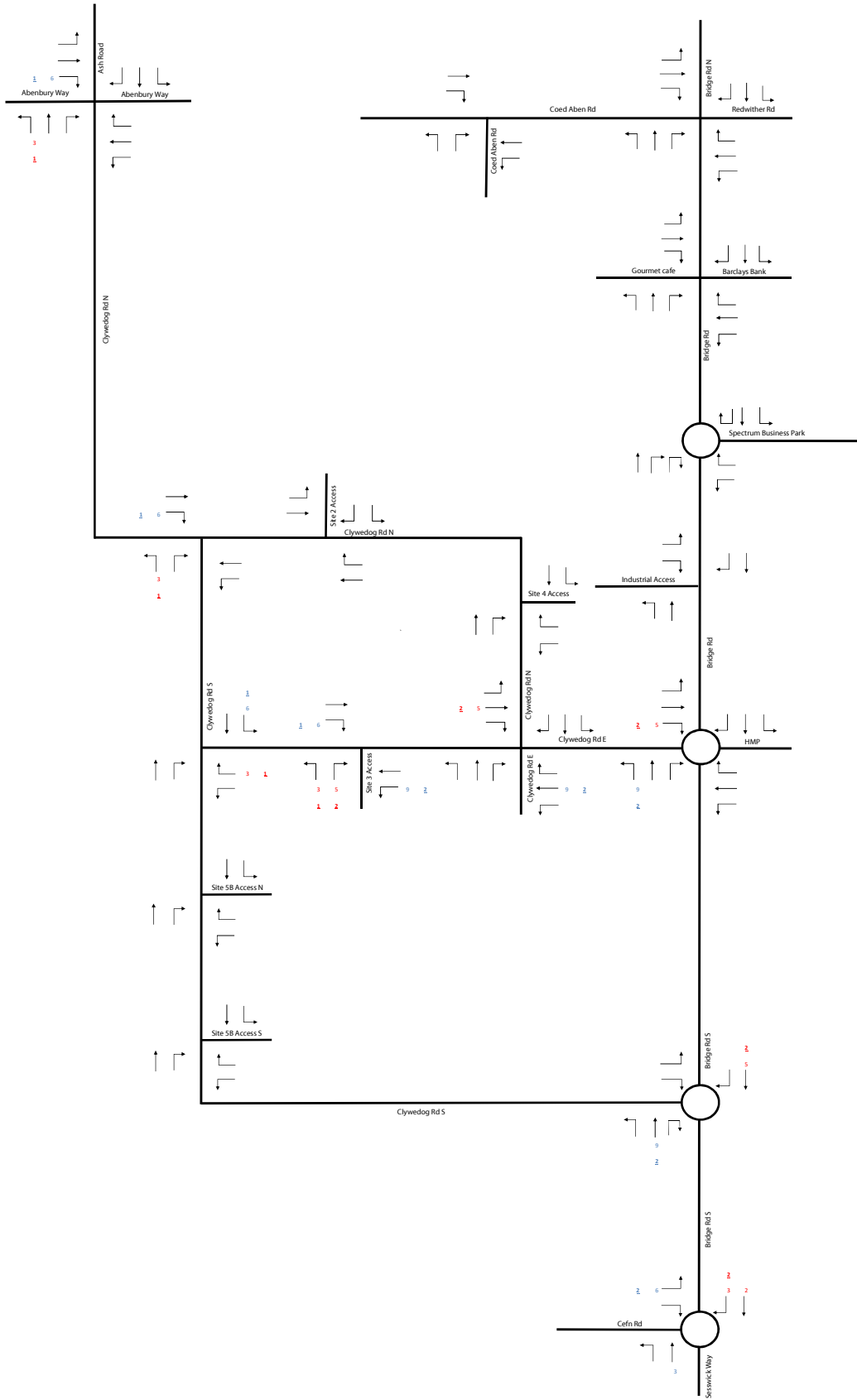
Project:	Wrexham Industrial Estate
Scenario:	Traffic Flow Diagram 8 - Site 3 Generated Traffic
Peak	
Notes:	Normal - standard vehicles

Normal - standard vehicles

Bold - HGVs

Arrivals 15 3

Any differences as a result of rounding



Project:
Scenario:
Peak
Notes:

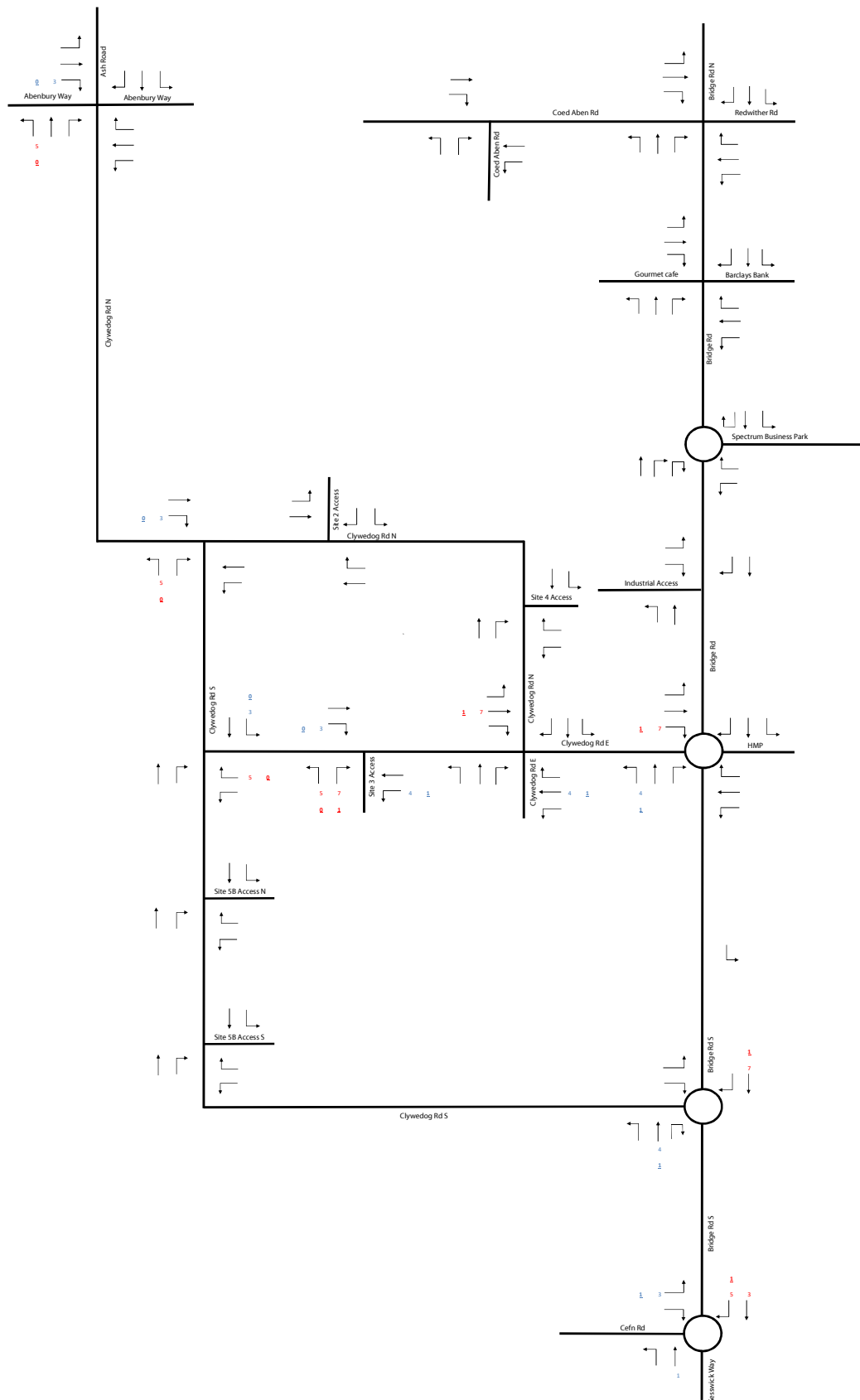
Wrexham Industrial Estate
Traffic Flow Diagram 9 - Site 3 Generated Traffic
Normal - standard vehicles

Arrivals
Departures

7
12

1
1

Any differences as a result of rounding



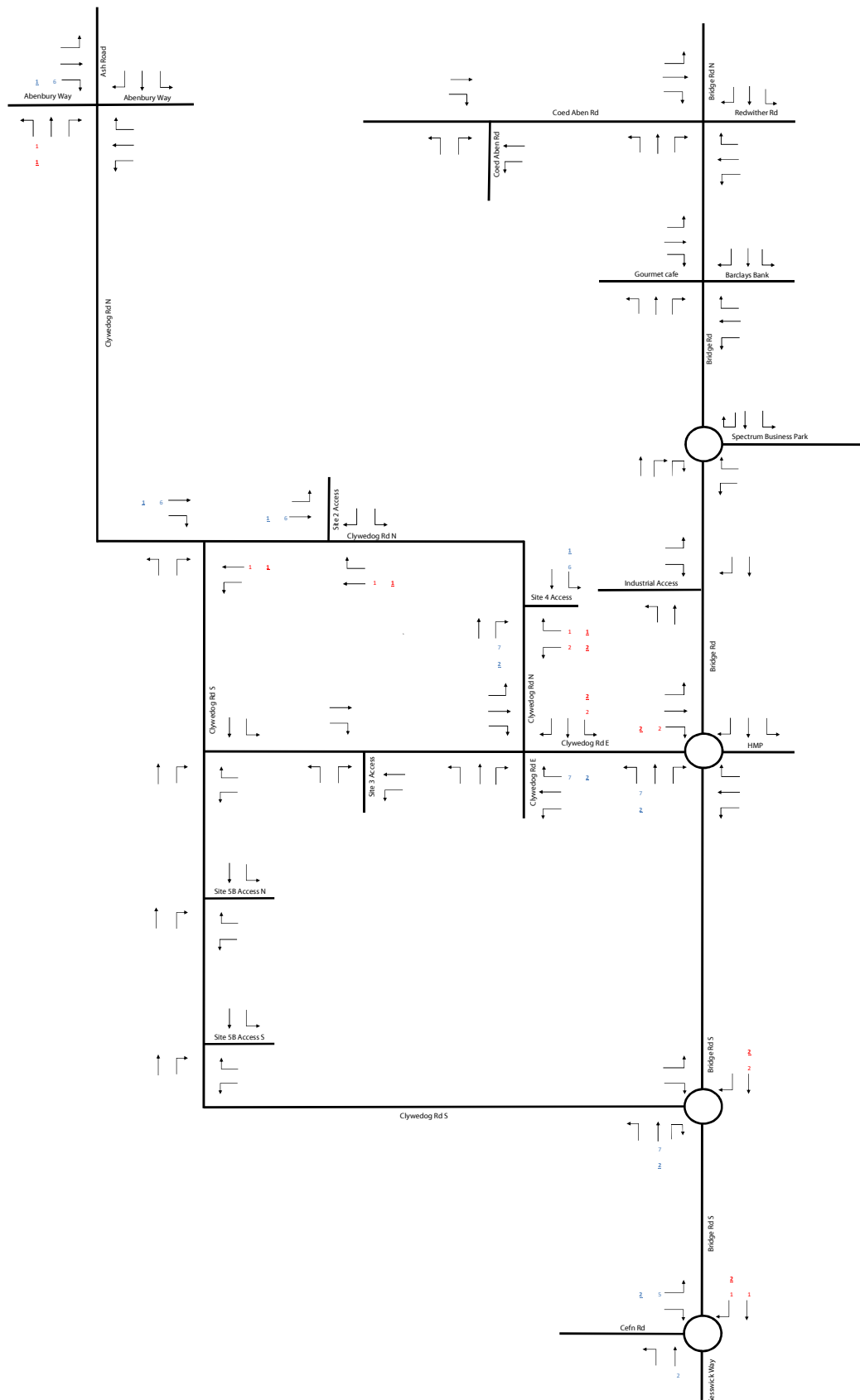
Project:
Scenario:
Peak:
Notes:

Wrexham Industrial Estate
Traffic Flow Diagram 10 - Site 4 Generated Traffic
Normal - standard vehicles

Arrivals
Departures

13
3

Any differences as a result of rounding



Project:

Wrexham Industrial Estate

Scenario:

Traffic Flow Diagram 11 - Site 4 Generated Traffic

Peak:

Notes:

Normal - standard vehicles

Bold - HGVs

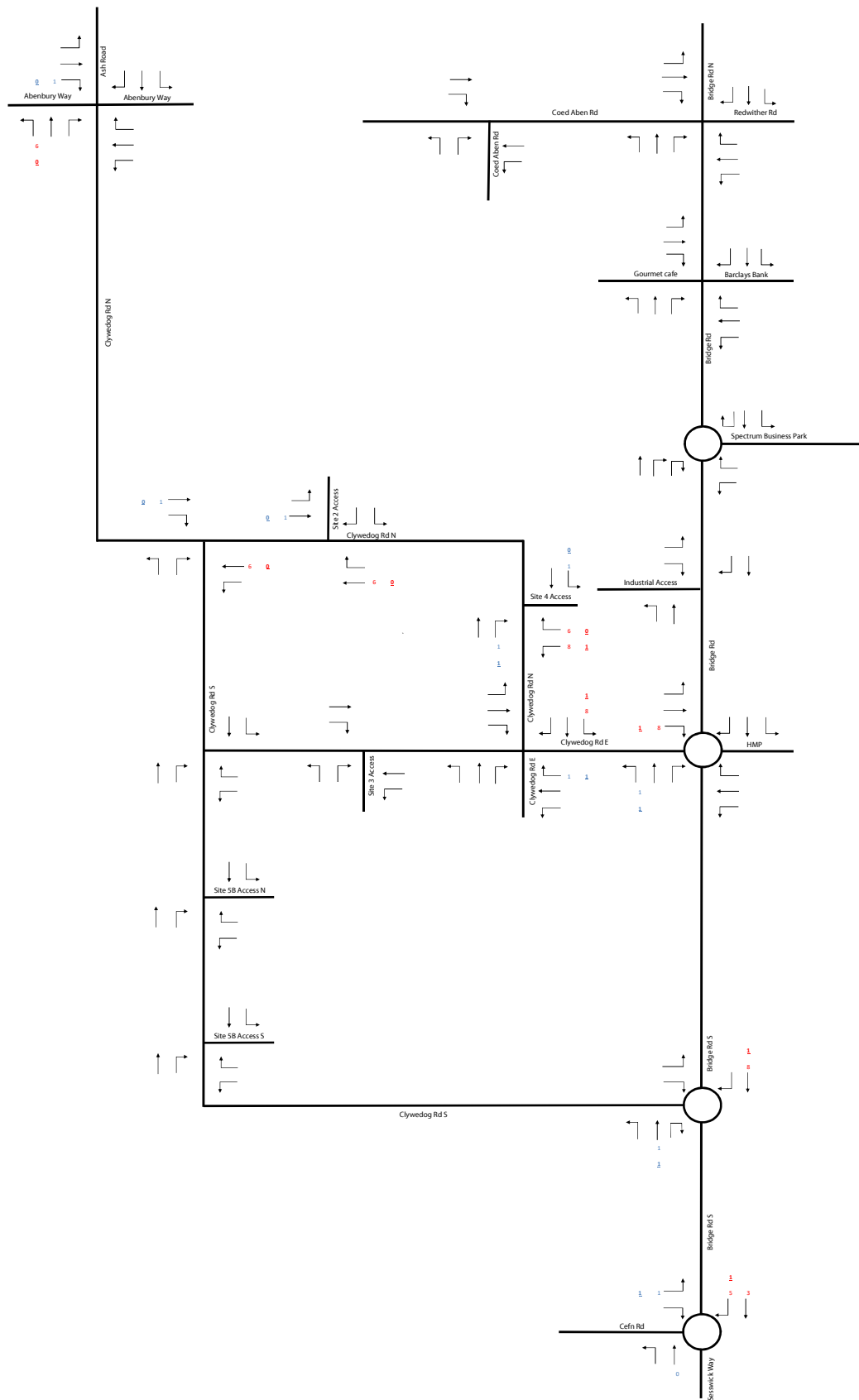
Arrivals

21

Departures

141

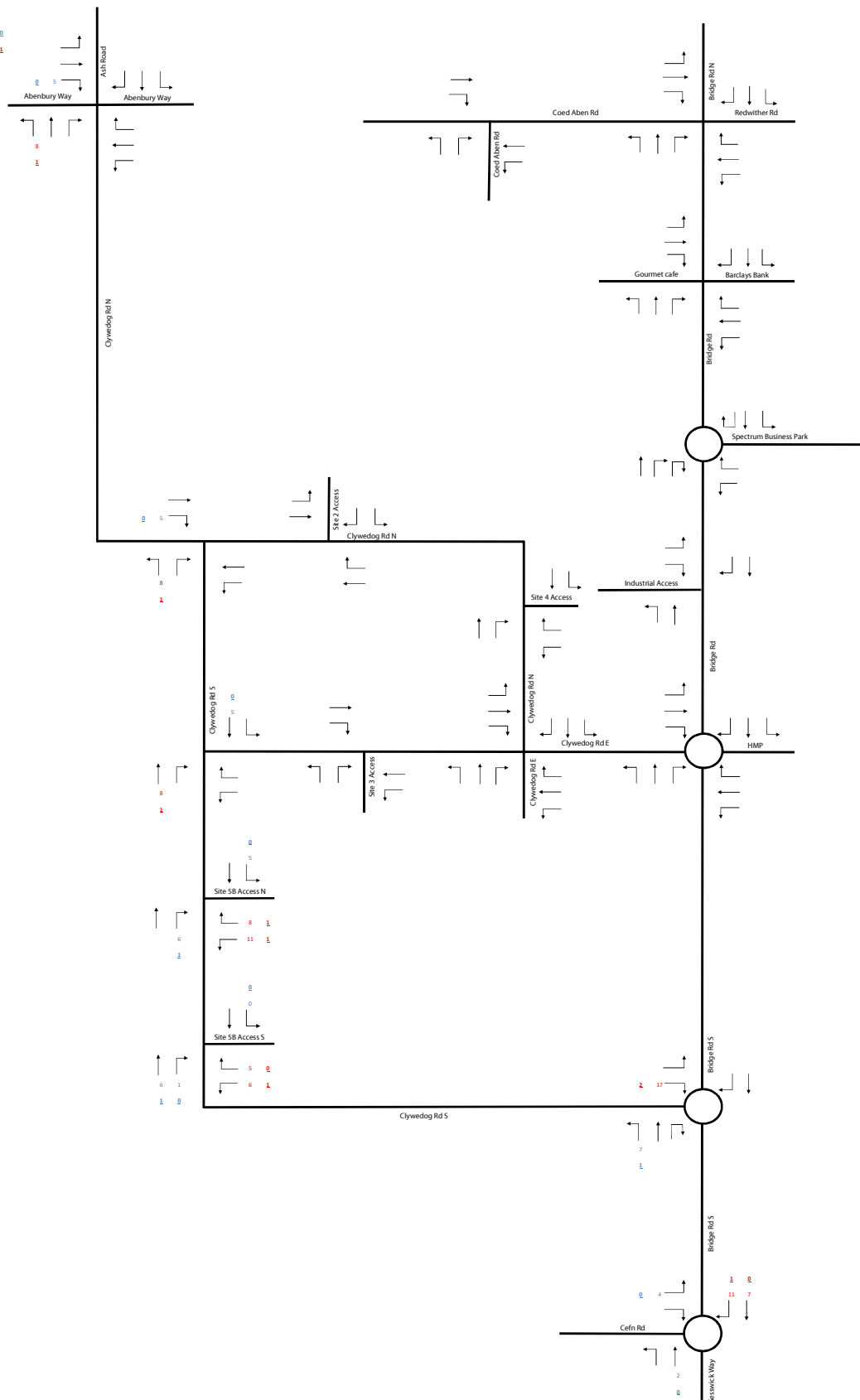
Any differences as a result of rounding



Project: Wrexham Industrial Estate
 Scenario: Traffic Flow Diagram 13 - Site 5 Generated Traffic
 Peak
 Notes: Normal - standard vehicles

Site 5 N
 Bold - HGVs
 Arrivals 11 1
 Departures 19 2

Site 5 S
 Arrivals 1 0
 Departures 11 1
 Any differences as a result of rounding



Project:

Wrexham Industrial Estate

Scenario:

Traffic Flow Diagram 14 - Total Dev

Peak:

AM (0745-0845)

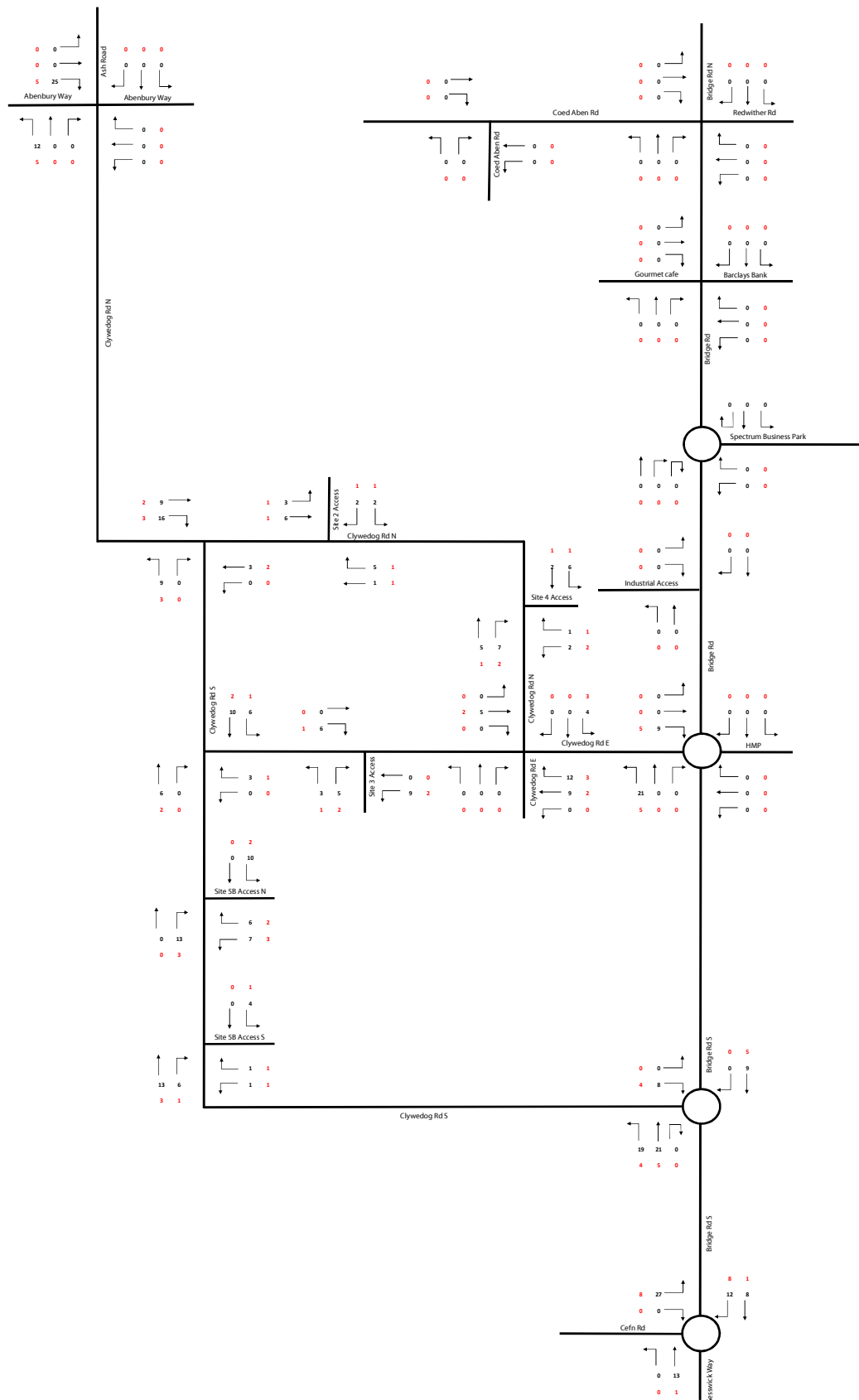
Notes:

All flows are in vehicles

Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red

Any differences as a result of rounding



Project:

Wrexham Industrial Estate

Scenario:

Traffic Flow Diagram 15 - Total Dev

Peak:

AM (1615-1715)

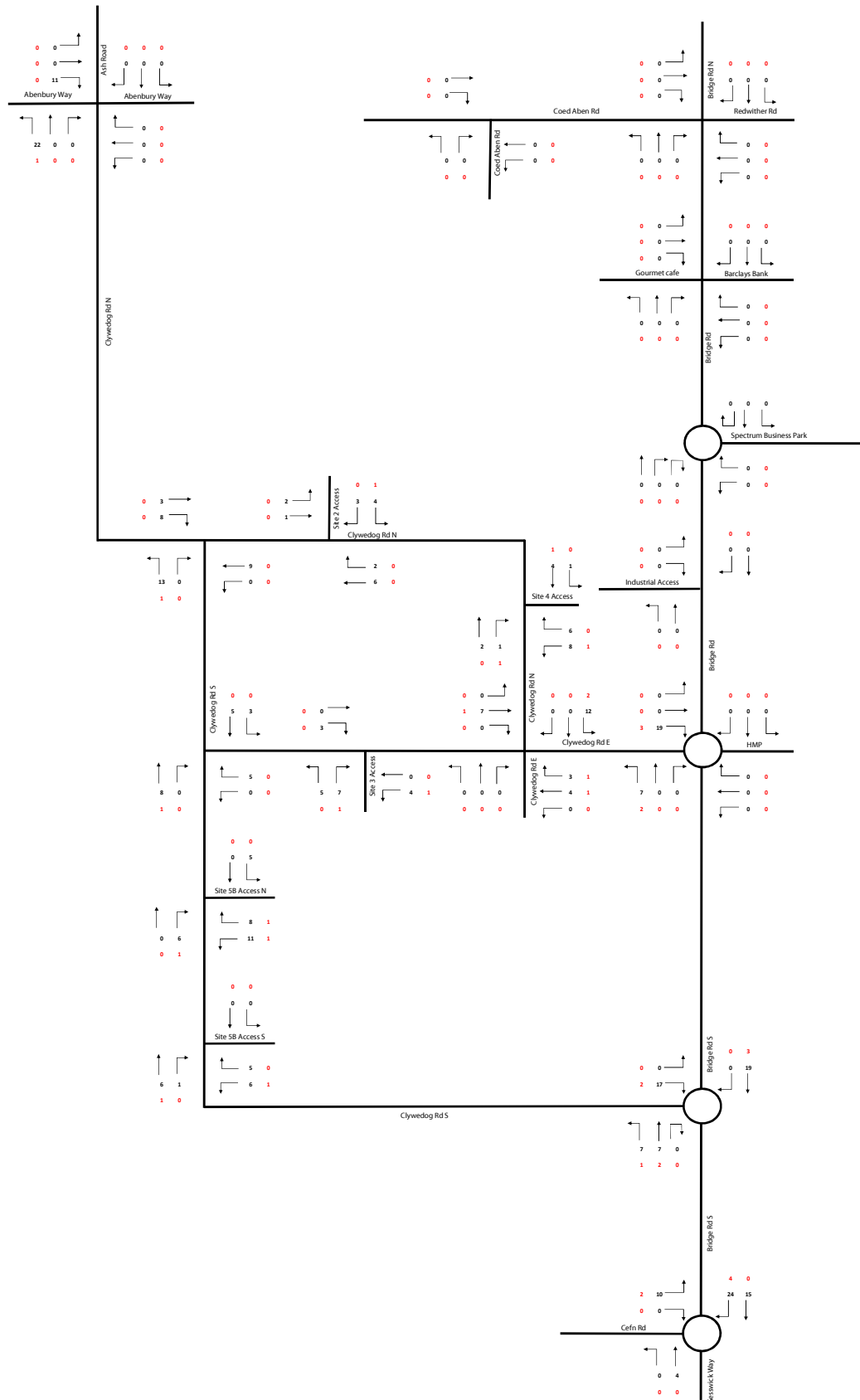
Notes:

All flows are in vehicles

Light Vehicles (cars & LGVs) in black

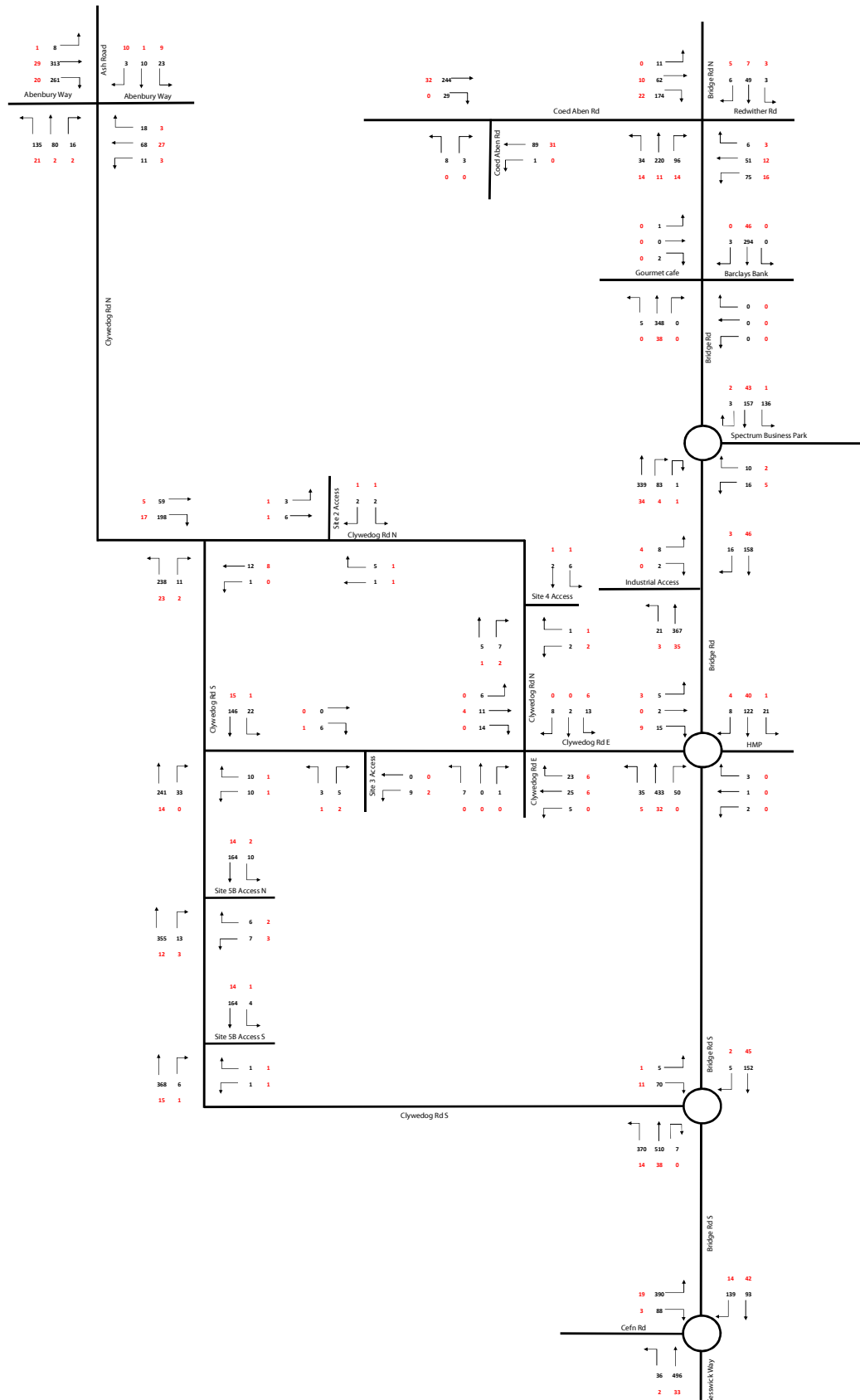
Heavy Vehicles (HGVs & buses) in red

Any differences as a result of rounding



Project: Wrexham Industrial Estate
Scenario: Traffic Flow Diagram 16 - 2033 With Development
Peak: AM (0745-0845)

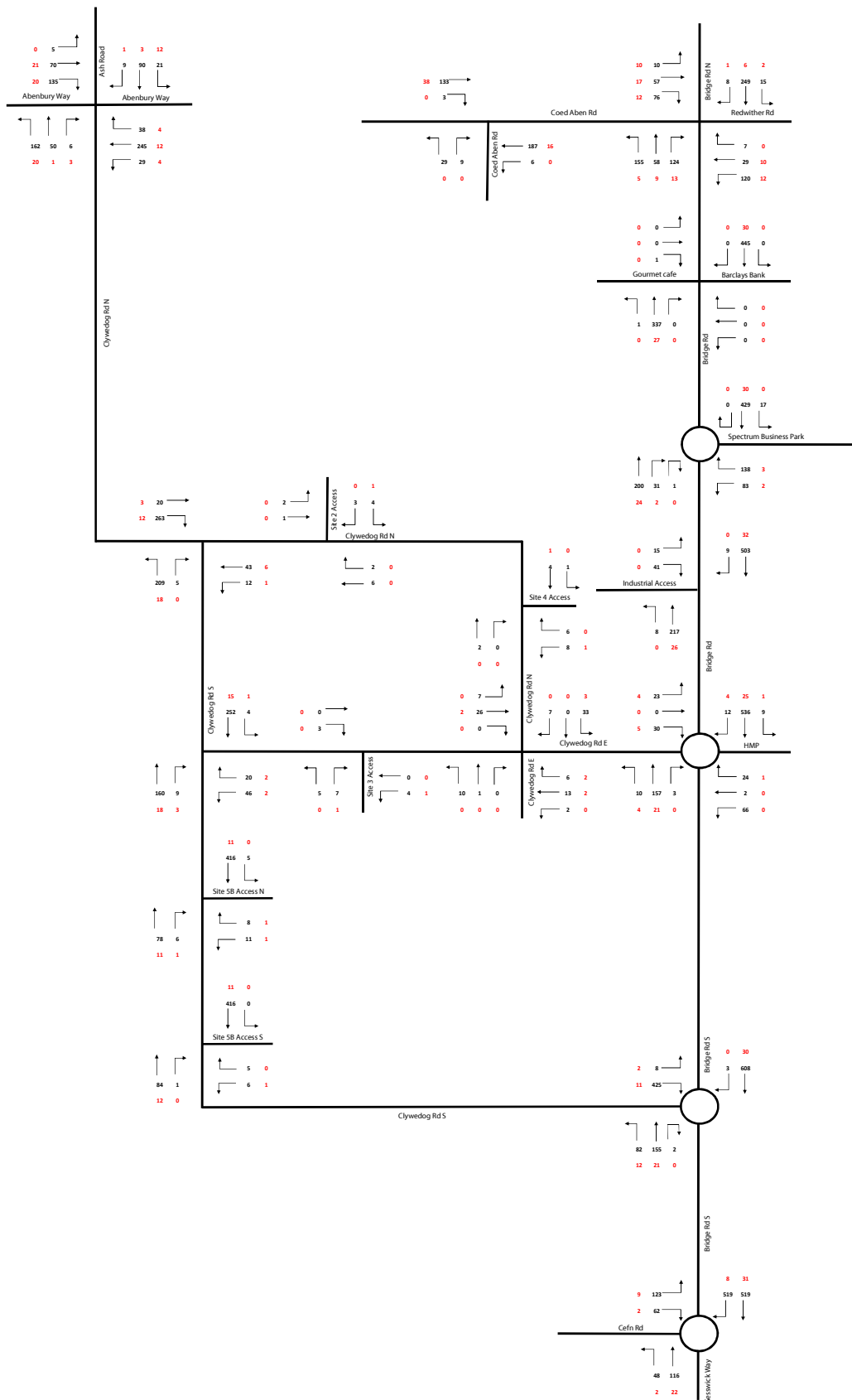
Notes:
All flows are in vehicles
Light Vehicles (cars & LGVs) in black
Heavy Vehicles (HGVs & buses) in red
Any differences as a result of rounding



Project:	WrexPM Industrial Estate
Scenario:	Traffic Flow Diagram 17 - 2033 With Development
Peak	PM (1615-1715)
Notes:	All flows are in vehicles

Light Vehicles (cars & LGVs) in black
Heavy Vehicles (HGVs & buses) in red

Any differences as a result of rounding



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APPENDIX II

TRICS

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Calculation Reference: AUDIT-753001-180518-0547

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : C - INDUSTRIAL UNIT
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
03	SOUTH WEST	
	DV DEVON	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
	WM WEST MIDLANDS	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	LC LANCASHIRE	1 days
11	SCOTLAND	
	EB CITY OF EDINBURGH	1 days
	FI FIFE	1 days
	SR STIRLING	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 1100 to 8000 (units: sqm)
 Range Selected by User: 300 to 8000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/07 to 06/07/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	2 days
Thursday	4 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	7

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	9
Commercial Zone	1
Development Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

B1	8 days
B2	2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	3 days
10,001 to 15,000	2 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	2 days
75,001 to 100,000	3 days
100,001 to 125,000	1 days
125,001 to 250,000	5 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	11 days
----	---------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	11 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CH-02-C-03	OFFICE FURNITURE	CESHIRE
	BRUNEL ROAD		
	LYME GREEN BUS. PARK		
	MACCLESFIELD		
	Edge of Town		
	Development Zone		
	Total Gross floor area:	6658 sqm	
	Survey date: MONDAY	19/09/16	Survey Type: MANUAL
2	DV-02-C-02	ENERGY RECOVERY FACILITY	DEVON
	GRACE ROAD SOUTH		
	MARSH BARTON TRAD. EST.		
	EXETER		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	3513 sqm	
	Survey date: THURSDAY	06/07/17	Survey Type: MANUAL
3	EB-02-C-01	BREWERY	CITY OF EDINBURGH
	DRYDEN ROAD		
	LOANHEAD		
	EDINBURGH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1200 sqm	
	Survey date: MONDAY	16/06/08	Survey Type: MANUAL
4	FI-02-C-01	REFRIGERATION	FIFE
	HALBEATH PLACE		
	DUNFERMLINE		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	4900 sqm	
	Survey date: FRIDAY	20/04/07	Survey Type: MANUAL
5	HC-02-C-01	ENGINEERING COMPANY	HAMPSHIRE
	JAYS CLOSE		
	BASINGSTOKE		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3000 sqm	
	Survey date: THURSDAY	16/06/16	Survey Type: MANUAL
6	HE-02-C-02	THERMAL PROCESSING	HEREFORDSHIRE
	COLLEGE ROAD		
	BURCOTT		
	HEREFORD		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	1880 sqm	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL
7	HF-02-C-01	INDUSTRIAL UNIT	HERTFORDSHIRE
	BRIDGE ROAD EAST		
	WELWYN GARDEN CITY		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	1800 sqm	
	Survey date: THURSDAY	17/07/08	Survey Type: MANUAL
8	LC-02-C-02	RECYCLING CO.	LANCASHIRE
	ESSEX STREET		
	RED SCAR IND ESTATE		
	PRESTON		
	Edge of Town Centre		
	Industrial Zone		
	Total Gross floor area:	8000 sqm	
	Survey date: THURSDAY	10/05/12	Survey Type: MANUAL
9	SF-02-C-01	JOINERY	SUFFOLK
	ANSON ROAD		
	MARTLESHAM HEATH		
	IPSWICH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	1100 sqm	
	Survey date: FRIDAY	12/07/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	SR-02-C-01	SPECIALIST MODEL MAKING	STIRLING
	BORROWMEADOW ROAD		
	STIRLING		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	2350 sqm	
	Survey date: MONDAY	16/06/14	Survey Type: MANUAL
11	WM-02-C-03	INDUSTRIAL GLASS	WEST MIDLANDS
	DOWNING STREET		
	SMETHWICK		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	5070 sqm	
	Survey date: TUESDAY	06/11/12	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DC-02-C-07	to high trips
RE-02-C-01	too Low
WM-02-C-02	too Low

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT
VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	2350	0.298	1	2350	0.043	1	2350	0.341
07:00 - 08:00	11	3588	0.385	11	3588	0.061	11	3588	0.446
08:00 - 09:00	11	3588	0.385	11	3588	0.094	11	3588	0.479
09:00 - 10:00	11	3588	0.248	11	3588	0.114	11	3588	0.362
10:00 - 11:00	11	3588	0.152	11	3588	0.114	11	3588	0.266
11:00 - 12:00	11	3588	0.109	11	3588	0.124	11	3588	0.233
12:00 - 13:00	11	3588	0.170	11	3588	0.175	11	3588	0.345
13:00 - 14:00	11	3588	0.172	11	3588	0.195	11	3588	0.367
14:00 - 15:00	11	3588	0.109	11	3588	0.127	11	3588	0.236
15:00 - 16:00	11	3588	0.111	11	3588	0.167	11	3588	0.278
16:00 - 17:00	11	3588	0.076	11	3588	0.319	11	3588	0.395
17:00 - 18:00	11	3588	0.056	11	3588	0.426	11	3588	0.482
18:00 - 19:00	9	3580	0.022	10	3457	0.130	9	3580	0.152
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	2.293			2.089			4.382		

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	1100 - 8000 (units: sqm)
Survey date range:	01/01/07 - 06/07/17
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	3

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	3588	0.018	11	3588	0.020	11	3588	0.038
08:00 - 09:00	11	3588	0.046	11	3588	0.033	11	3588	0.079
09:00 - 10:00	11	3588	0.038	11	3588	0.035	11	3588	0.073
10:00 - 11:00	11	3588	0.041	11	3588	0.033	11	3588	0.074
11:00 - 12:00	11	3588	0.035	11	3588	0.043	11	3588	0.078
12:00 - 13:00	11	3588	0.046	11	3588	0.058	11	3588	0.104
13:00 - 14:00	11	3588	0.030	11	3588	0.030	11	3588	0.060
14:00 - 15:00	11	3588	0.023	11	3588	0.020	11	3588	0.043
15:00 - 16:00	11	3588	0.020	11	3588	0.015	11	3588	0.035
16:00 - 17:00	11	3588	0.010	11	3588	0.018	11	3588	0.028
17:00 - 18:00	11	3588	0.005	11	3588	0.008	11	3588	0.013
18:00 - 19:00	10	3457	0.003	10	3457	0.000	10	3457	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.315			0.313			0.628

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	1100 - 8000 (units: sqm)
Survey date range:	01/01/07 - 06/07/17
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	3

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-753001-180518-0557

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : F - WAREHOUSING (COMMERCIAL)
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	KC KENT	1 days
	SC SURREY	1 days
03	SOUTH WEST	
	CW CORNWALL	1 days
04	EAST ANGLIA	
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days
08	NORTH WEST	
	LC LANCASHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
	TV TEES VALLEY	1 days
10	WALES	
	BG BRIDGEND	1 days
11	SCOTLAND	
	ML MIDLOTHIAN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 634 to 11200 (units: sqm)
 Range Selected by User: 634 to 13000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/07 to 22/09/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	5 days
Wednesday	2 days
Friday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	8

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	7
Commercial Zone	1
Residential Zone	1
Built-Up Zone	1
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

B8 11 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
5,001 to 10,000	4 days
10,001 to 15,000	3 days
15,001 to 20,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
125,001 to 250,000	4 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No 12 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present 12 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BG-02-F-01	LOGISTICS COMPANY	BRIDGEND
	PARC CRESCENT		
	WATERTON IND. EST.		
	BRIDGEND		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	3050 sqm	
	Survey date: MONDAY	13/10/14	Survey Type: MANUAL
2	CB-02-F-01	DOMINO'S PIZZA	CUMBRIA
	COWPER ROAD		
	GILWILLY IND. ESTATE		
	PENRITH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	2950 sqm	
	Survey date: TUESDAY	10/06/14	Survey Type: MANUAL
3	CW-02-F-01	WAREHOUSING	CORNWALL
	A390		
	THREEMILESTONE		
	NEAR TRURO		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	5150 sqm	
	Survey date: TUESDAY	18/09/07	Survey Type: MANUAL
4	DS-02-F-01	ARMADILLO S. STORAGE	DERBYSHIRE
	FORRESTERS BUSINESS P..		
	SINFIN LANE		
	DERBY		
	Edge of Town Centre		
	Commercial Zone		
	Total Gross floor area:	1900 sqm	
	Survey date: TUESDAY	05/07/11	Survey Type: MANUAL
5	HC-02-F-01	WAREHOUSING	HAMPSHIRE
	MAURETANIA ROAD		
	NURSLING INDUSTRIAL ESTATE		
	SOUTHAMPTON		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	4000 sqm	
	Survey date: WEDNESDAY	21/11/07	Survey Type: MANUAL
6	KC-02-F-02	COMMERCIAL WAREHOUSING	KENT
	MILLS ROAD		
	QUARRY WOOD		
	AYLESFORD		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11200 sqm	
	Survey date: FRIDAY	22/09/17	Survey Type: MANUAL
7	LC-02-F-02	WAREHOUSING	LANCASHIRE
	CHORLEY ROAD		
	WALTON-LE-DALE		
	PRESTON		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	1200 sqm	
	Survey date: FRIDAY	22/06/07	Survey Type: MANUAL
8	ML-02-F-01	WINDOWS	MIDLOTHIAN
	UNIT 53		
	MAYFIELD IND. ESTATE		
	DALKEITH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	750 sqm	
	Survey date: WEDNESDAY	04/05/11	Survey Type: MANUAL
9	SC-02-F-04	WAREHOUSING	SURREY
	PRETORIA ROAD		
	CHERTSEY		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	4460 sqm	
	Survey date: TUESDAY	27/11/07	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	SF-02-F-03	ROAD HAULAGE	SUFFOLK
	CENTRAL AVENUE		
	WARREN HEATH		
	IPSWICH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	4700 sqm	
	Survey date: FRIDAY	18/09/15	Survey Type: MANUAL
11	TV-02-F-03	ELECTRICAL COMPONENTS	TEES VALLEY
	UNIT 8,NAVIGATOR COURT		
	STOCKTON-ON-TEES		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	634 sqm	
	Survey date: TUESDAY	28/06/11	Survey Type: MANUAL
12	WY-02-F-01	ELECTRONICS DISTRIBUTION	WEST YORKSHIRE
	MORTIMER STREET		
	CLECKHEATON		
	Edge of Town Centre		
	Built-Up Zone		
	Total Gross floor area:	1507 sqm	
	Survey date: MONDAY	19/09/16	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	1	2950	0.102	1	2950	0.000	1	2950	0.102
06:00 - 07:00	1	2950	0.136	1	2950	0.034	1	2950	0.170
07:00 - 08:00	12	3458	0.296	12	3458	0.125	12	3458	0.421
08:00 - 09:00	12	3458	0.349	12	3458	0.193	12	3458	0.542
09:00 - 10:00	12	3458	0.217	12	3458	0.200	12	3458	0.417
10:00 - 11:00	12	3458	0.178	12	3458	0.176	12	3458	0.354
11:00 - 12:00	12	3458	0.188	12	3458	0.183	12	3458	0.371
12:00 - 13:00	12	3458	0.193	12	3458	0.166	12	3458	0.359
13:00 - 14:00	12	3458	0.195	12	3458	0.195	12	3458	0.390
14:00 - 15:00	12	3458	0.190	12	3458	0.193	12	3458	0.383
15:00 - 16:00	12	3458	0.181	12	3458	0.241	12	3458	0.422
16:00 - 17:00	12	3458	0.169	12	3458	0.292	12	3458	0.461
17:00 - 18:00	12	3458	0.089	12	3458	0.277	12	3458	0.366
18:00 - 19:00	11	3636	0.045	11	3636	0.108	11	3636	0.153
19:00 - 20:00	1	2950	0.203	1	2950	0.203	1	2950	0.406
20:00 - 21:00	1	2950	0.102	1	2950	0.136	1	2950	0.238
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.833			2.722			5.555

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter summary

Trip rate parameter range selected:	634 - 11200 (units: sqm)
Survey date range:	01/01/07 - 22/09/17
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	1	2950	0.000	1	2950	0.000	1	2950	0.000
06:00 - 07:00	1	2950	0.068	1	2950	0.000	1	2950	0.068
07:00 - 08:00	12	3458	0.031	12	3458	0.065	12	3458	0.096
08:00 - 09:00	12	3458	0.077	12	3458	0.080	12	3458	0.157
09:00 - 10:00	12	3458	0.058	12	3458	0.072	12	3458	0.130
10:00 - 11:00	12	3458	0.051	12	3458	0.041	12	3458	0.092
11:00 - 12:00	12	3458	0.075	12	3458	0.075	12	3458	0.150
12:00 - 13:00	12	3458	0.063	12	3458	0.039	12	3458	0.102
13:00 - 14:00	12	3458	0.077	12	3458	0.058	12	3458	0.135
14:00 - 15:00	12	3458	0.089	12	3458	0.039	12	3458	0.128
15:00 - 16:00	12	3458	0.080	12	3458	0.058	12	3458	0.138
16:00 - 17:00	12	3458	0.063	12	3458	0.039	12	3458	0.102
17:00 - 18:00	12	3458	0.019	12	3458	0.029	12	3458	0.048
18:00 - 19:00	11	3636	0.015	11	3636	0.035	11	3636	0.050
19:00 - 20:00	1	2950	0.000	1	2950	0.203	1	2950	0.203
20:00 - 21:00	1	2950	0.000	1	2950	0.102	1	2950	0.102
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.766			0.935			1.701

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter summary

Trip rate parameter range selected:	634 - 11200 (units: sqm)
Survey date range:	01/01/07 - 22/09/17
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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APPENDIX III

RTF GROWTH

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Traffic, Congestion and Emissions by Region, Road Type & Vehicle Type
Scenario1 - Traffic in Billion Miles, Emissions in Kilo Tonnes

Area Type (All)
Region2 England

Row Label Rd Type2	Year						
	2010	2015	2020	2025	2030	2035	2040
Wales							
Motorway							
Car miles	1.58	1.70	1.84	1.99	2.08	2.16	2.24
LGV Miles	0.26	0.28	0.32	0.36	0.40	0.43	0.46
Rigid miles	0.09	0.08	0.09	0.09	0.09	0.09	0.09
Artic Miles	0.10	0.10	0.11	0.11	0.12	0.13	0.14
PSV Miles	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total miles	2.03	2.17	2.36	2.56	2.69	2.82	2.94
Total CO2 KT	774	741	673	654	648	655	671
Total Nox KT	2.94	1.96	1.20	0.90	0.81	0.81	0.84
Total PM10 KT	0.09	0.04	0.01	0.01	0.01	0.01	0.01
Ave Delay sec/mile	1.13	1.39	1.93	2.74	3.48	4.41	5.42
Ave Speed mph	67.5	67.3	66.6	65.7	64.9	63.8	62.7
Trunk							
Car miles	3.01	3.16	3.43	3.57	3.72	3.88	4.02
LGV Miles	0.51	0.55	0.63	0.71	0.79	0.85	0.92
Rigid miles	0.15	0.15	0.15	0.16	0.16	0.16	0.17
Artic Miles	0.09	0.09	0.09	0.09	0.10	0.11	0.11
PSV Miles	0.03	0.02	0.02	0.02	0.02	0.02	0.02
Total miles	3.79	3.97	4.33	4.56	4.79	5.02	5.23
Total CO2 KT	1244	1166	1052	994	979	989	1018
Total Nox KT	4.31	2.77	1.65	1.23	1.14	1.17	1.22
Total PM10 KT	0.13	0.06	0.02	0.01	0.01	0.01	0.01
Ave Delay sec/mile	5.31	5.59	5.71	6.29	6.81	7.26	7.82
Ave Speed mph	48.7	48.6	48.5	48.2	47.9	47.6	47.3
Principal							
Car miles	3.86	4.07	4.38	4.61	4.79	4.98	5.15
LGV Miles	0.57	0.62	0.71	0.79	0.87	0.95	1.02
Rigid miles	0.12	0.12	0.12	0.13	0.13	0.13	0.13
Artic Miles	0.03	0.03	0.03	0.03	0.04	0.04	0.04
PSV Miles	0.05	0.04	0.04	0.04	0.04	0.04	0.04
Total miles	4.62	4.88	5.29	5.60	5.87	6.14	6.39
Total CO2 KT	1343	1261	1124	1052	1024	1030	1060
Total Nox KT	4.29	2.97	1.84	1.38	1.27	1.30	1.35
Total PM10 KT	0.13	0.06	0.02	0.01	0.01	0.01	0.01
Ave Delay sec/mile	9.60	10.23	11.30	12.25	13.09	14.05	15.05
Ave Speed mph	40.8	40.6	40.1	39.7	39.4	38.9	38.5
Minor							
Car miles	4.81	5.00	5.37	5.58	5.81	6.05	6.28
LGV Miles	0.99	1.07	1.22	1.37	1.52	1.65	1.78
Rigid miles	0.13	0.13	0.13	0.13	0.14	0.14	0.14
Artic Miles	0.00	0.00	0.00	0.01	0.01	0.01	0.01
PSV Miles	0.08	0.08	0.08	0.08	0.07	0.07	0.07
Total miles	6.02	6.29	6.81	7.17	7.54	7.92	8.28
Total CO2 KT	1779	1652	1470	1366	1333	1345	1390
Total Nox KT	5.84	4.25	2.68	1.99	1.84	1.88	1.97
Total PM10 KT	0.18	0.08	0.03	0.01	0.01	0.01	0.01
Ave Delay sec/mile	7.87	8.05	8.57	8.95	9.35	9.56	9.97
Ave Speed mph	30.5	30.4	30.3	30.2	30.1	30.0	29.9
Wales Car miles	13.26	13.94	15.03	15.76	16.40	17.07	17.69
Wales LGV Miles	2.34	2.53	2.88	3.24	3.57	3.88	4.18
Wales Rigid miles	0.49	0.48	0.50	0.50	0.52	0.52	0.53
Wales Artic Miles	0.22	0.22	0.23	0.25	0.26	0.28	0.30
Wales PSV Miles	0.16	0.15	0.15	0.15	0.14	0.14	0.14
Wales Total miles	16.46	17.31	18.79	19.90	20.89	21.90	22.84
Wales Total CO2 KT	5139	4819	4319	4066	3983	4019	4139
Wales Total Nox KT	17.37	11.95	7.38	5.50	5.07	5.16	5.38
Wales Total PM10 KT	0.54	0.25	0.09	0.04	0.04	0.04	0.04
Wales Ave Delay sec/mile	6.94	7.26	7.85	8.47	9.06	9.63	10.31
Wales Ave Speed mph	39.3	39.2	39.0	38.8	38.6	38.3	38.1

HGV & PSV Combined						
Year	5 Year Value	5 Year Diff	Linear Diff	Increment	1 Year Value	Check
2010	0.1972	-0.01	0.00			
2011				1	0.1959	
2012				2	0.1946	
2013				3	0.1933	
2014				4	0.1920	
2015	0.1907	0.01	0.00	5	0.1907	0.0000
2016				1	0.1918	
2017				2	0.1930	
2018				3	0.1941	
2019				4	0.1953	
2020	0.1964	0.00	0.00	5	0.1964	0.0000
2021				1	0.1972	
2022				2	0.1979	
2023				3	0.1986	
2024				4	0.1994	
2025	0.2001	0.00	0.00	5	0.2001	0.0000
2026				1	0.2010	
2027				2	0.2019	
2028				3	0.2028	
2029				4	0.2037	
2030	0.2045	0.01	0.00	5	0.2045	0.0000
2031				1	0.2056	
2032				2	0.2066	
2033				3	0.2076	1.06926
2034				4	0.2086	
2035	0.2096			5	0.2096	0.0000

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APPENDIX IV

JUNCTIONS 9 MODEL OUTPUTS

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Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site Access 5B (S).j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 08:52:11

»1 With Development 2033, AM
»1 With Development 2033, PM

File summary

File Description

Title	Site Access 5B (S)/Clywedog Road S
Location	Wrexham
Site number	
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHC/b.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 5B (S)/Clywedog Road S	T-Junction	Two-way		0.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road S (Northern Arm)		Major
B	Site Access 5B (S)		Minor
C	Clywedog Road S (Southern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road S (Southern Arm)	7.40			120.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access 5B (S)	One lane	3.60	60	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	558	0.096	0.241	0.152	0.345
1	B-C	701	0.101	0.255	-	-
1	C-B	643	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	198	100.000
B - Site Access 5B (S)		ONE HOUR	✓	6	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	406	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (S)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	6	192
	B - Site Access 5B (S)	3	0	3
	C - Clywedog Road S (Southern Arm)	398	8	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (S)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	20	8
	B - Site Access 5B (S)	50	0	50
	C - Clywedog Road S (Southern Arm)	4	14	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	10.48	0.0	B	6	8
C-AB	0.02	4.98	0.0	A	13	20
C-A					359	539
AB					6	8
AC					176	264

1 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 5B (S)/Clywedog Road S	T-Junction	Two-way		0.20	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	438	100.000
B - Site Access 5B (S)		ONE HOUR	✓	13	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	109	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (S)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	0	438
	B - Site Access 5B (S)	5	0	8
	C - Clywedog Road S (Southern Arm)	108	1	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (S)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	0	3
	B - Site Access 5B (S)	0	0	14
	C - Clywedog Road S (Southern Arm)	13	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.03	7.91	0.0	A	12	18
C-AB	0.00	6.00	0.0	A	1	2
C-A					99	148
AB					0	0
A-C					402	603

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site Access 5B (N).j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 08:51:46

»1 With Development 2033, AM
»1 With Development 2033, PM

File summary

File Description

Title	Site Access 5B (N)/Clywedog Road S
Location	Wrexham
Site number	
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHC/b.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 5B (N)/Clywedog Road S	T-Junction	Two-way		0.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road S (Northern Arm)		Major
B	Site Access 5B (N)		Minor
C	Clywedog Road S (Southern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road S (Southern Arm)	7.40			120.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access 5B (N)	One lane	3.60	60	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	558	0.096	0.241	0.152	0.345
1	B-C	701	0.101	0.255	-	-
1	C-B	643	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	206	100.000
B - Site Access 5B (N)		ONE HOUR	✓	23	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	398	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (N)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	14	192
	B - Site Access 5B (N)	10	0	13
	C - Clywedog Road S (Southern Arm)	379	19	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (N)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	17	8
	B - Site Access 5B (N)	25	0	30
	C - Clywedog Road S (Southern Arm)	3	19	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.05	9.05	0.1	A	21	32
C-AB	0.05	5.24	0.1	A	31	46
C-A					335	502
AB					13	19
AC					176	264

1 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 5B (N)/Clywedog Road S	T-Junction	Two-way		0.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	443	100.000
B - Site Access 5B (N)		ONE HOUR	✓	23	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	108	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (N)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	5	438
	B - Site Access 5B (N)	10	0	13
	C - Clywedog Road S (Southern Arm)	100	8	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Site Access 5B (N)	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	0	3
	B - Site Access 5B (N)	11	0	8
	C - Clywedog Road S (Southern Arm)	12	14	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.05	8.35	0.1	A	21	32
C-AB	0.02	6.88	0.0	A	9	13
C-A					90	136
AB					5	7
A-C					402	603

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site Access 4.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 08:57:46

»1 With Development 2033, AM
»1 With Development 2033, PM

File summary

File Description

Title	Site Access 4/Clywedog Road N
Location	Wrexham
Site number	
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHC/b.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 4/Clywedog Road N	T-Junction	Two-way		4.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road N (Northern Arm)		Major
B	Site Access 4		Minor
C	Clywedog Road N (Southern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road N (Southern Arm)	7.00			70.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access 4	One lane	3.60	60	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	558	0.097	0.246	0.155	0.351
1	B-C	701	0.103	0.260	-	-
1	C-B	615	0.228	0.228	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Northern Arm)		ONE HOUR	✓	12	100.000
B - Site Access 4		ONE HOUR	✓	9	100.000
C - Clywedog Road N (Southern Arm)		ONE HOUR	✓	18	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road N (Northern Arm)	B - Site Access 4	C - Clywedog Road N (Southern Arm)
	A - Clywedog Road N (Northern Arm)	0	8	4
	B - Site Access 4	3	0	6
	C - Clywedog Road N (Southern Arm)	7	11	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road N (Northern Arm)	B - Site Access 4	C - Clywedog Road N (Southern Arm)
	A - Clywedog Road N (Northern Arm)	0	14	33
	B - Site Access 4	50	0	50
	C - Clywedog Road N (Southern Arm)	17	22	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	8.54	0.0	A	8	12
C-AB	0.02	7.28	0.0	A	10	15
C-A					6	9
AB					7	11
AC					4	6

1 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 4/Clywedog Road N	T-Junction	Two-way		4.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Northern Arm)		ONE HOUR	✓	7	100.000
B - Site Access 4		ONE HOUR	✓	16	100.000
C - Clywedog Road N (Southern Arm)		ONE HOUR	✓	2	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road N (Northern Arm)	B - Site Access 4	C - Clywedog Road N (Southern Arm)
	A - Clywedog Road N (Northern Arm)	0	1	6
	B - Site Access 4	6	0	10
	C - Clywedog Road N (Southern Arm)	2	0	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road N (Northern Arm)	B - Site Access 4	C - Clywedog Road N (Southern Arm)
	A - Clywedog Road N (Northern Arm)	0	0	20
	B - Site Access 4	0	0	11
	C - Clywedog Road N (Southern Arm)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.03	6.19	0.0	A	15	22
C-AB	0.00	0.00	0.0	A	0	0
C-A					0	0
AB					0.92	1
A-C					6	8

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site Access 3.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 08:57:19

»1 With Development 2033, AM
»1 With Development 2033, PM

File summary

File Description

Title	Site Access 3/Clywedog Road E
Location	Wrexham
Site number	
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHC/b.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 3/Clywedog Road E	T-Junction	Two-way		4.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road E (Eastern Arm)		Major
B	Site Access 3		Minor
C	Clywedog Road E (Western Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road E (Western Arm)	7.40			200.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access 3	One lane	3.60	60	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	558	0.096	0.241	0.152	0.345
1	B-C	701	0.101	0.255	-	-
1	C-B	690	0.251	0.251	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	13	100.000
B - Site Access 3		ONE HOUR	✓	14	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	8	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Site Access 3	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	13	0	
B - Site Access 3	9	0	5	
C - Clywedog Road E (Western Arm)	0	8	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Site Access 3	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	18	0	
B - Site Access 3	29	0	25	
C - Clywedog Road E (Western Arm)	0	14	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.03	7.86	0.0	A	13	19
C-AB	0.01	6.07	0.0	A	7	11
C-A					0	0
AB					12	18
AC					0	0

1 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 3/Clywedog Road E	T-Junction	Two-way		4.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	6	100.000
B - Site Access 3		ONE HOUR	✓	14	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Site Access 3	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	6	0	
B - Site Access 3	9	0	5	
C - Clywedog Road E (Western Arm)	0	3	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Site Access 3	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	20	0	
B - Site Access 3	13	0	0	
C - Clywedog Road E (Western Arm)	0	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.03	6.61	0.0	A	13	19
C-AB	0.00	0.00	0.0	A	0	0
C-A					0	0
AB					6	8
A-C					0	0

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896
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Filename: Site Access 2.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 08:52:42

»1 With Development 2033, AM
»1 With Development 2033, PM

File summary

File Description

Title	Site Access 2/Clywedog Road N
Location	Wrexham
Site number	
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHC/b.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 2/Clywedog Road N	T-Junction	Two-way		3.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road N (Western Arm)		Major
B	Site Access 2		Minor
C	Clywedog Road N (Eastern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road N (Eastern Arm)	7.40			100.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Site Access 2	One lane	3.60	60	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	558	0.096	0.241	0.152	0.345
1	B-C	701	0.101	0.255	-	-
1	C-B	632	0.230	0.230	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Western Arm)		ONE HOUR	✓	13	100.000
B - Site Access 2		ONE HOUR	✓	8	100.000
C - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	10	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road N (Western Arm)	B - Site Access 2	C - Clywedog Road N (Eastern Arm)	
A - Clywedog Road N (Western Arm)	0	5	8	
B - Site Access 2	4	0	4	
C - Clywedog Road N (Eastern Arm)	3	7	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road N (Western Arm)	B - Site Access 2	C - Clywedog Road N (Eastern Arm)	
A - Clywedog Road N (Western Arm)	0	25	14	
B - Site Access 2	33	0	33	
C - Clywedog Road N (Eastern Arm)	50	17	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	7.89	0.0	A	7	11
C-AB	0.01	6.75	0.0	A	6	10
C-A					3	4
AB					5	7
AC					7	11

1 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access 2/Clywedog Road N	T-Junction	Two-way		4.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Western Arm)		ONE HOUR	✓	3	100.000
B - Site Access 2		ONE HOUR	✓	9	100.000
C - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	8	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road N (Western Arm)	B - Site Access 2	C - Clywedog Road N (Eastern Arm)	
A - Clywedog Road N (Western Arm)	0	2	1	
B - Site Access 2	3	0	6	
C - Clywedog Road N (Eastern Arm)	6	2	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road N (Western Arm)	B - Site Access 2	C - Clywedog Road N (Eastern Arm)	
A - Clywedog Road N (Western Arm)	0	0	0	
B - Site Access 2	0	0	20	
C - Clywedog Road N (Eastern Arm)	0	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	6.37	0.0	A	8	12
C-AB	0.00	5.69	0.0	A	2	3
C-A					5	8
AB					0	0
A-C					0	0

Junctions 9
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Filename: J12b-Abenbury-Ash.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 08:55:36

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Abenbury Way/Ash Road N
Location	Wrexham
Site number	12b
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Ash Road N	T-Junction	Two-way		1.22	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Abenbury Way (Northern Arm)		Major
B	Ash Road N		Minor
C	Abenbury Way (Southern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Abenbury Way (Southern Arm)	7.00		✓	3.50	200.0	✓	7.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Ash Road N	One lane	4.50	60	24

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	585	0.102	0.258	0.162	0.368
1	B-C	735	0.108	0.272	-	-
1	C-B	787	0.292	0.292	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Abenbury Way (Northern Arm)		ONE HOUR	✓	577	100.000
B - Ash Road N		ONE HOUR	✓	68	100.000
C - Abenbury Way (Southern Arm)		ONE HOUR	✓	132	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)
From	A - Abenbury Way (Northern Arm)	0	9	568
	B - Ash Road N	21	0	47
	C - Abenbury Way (Southern Arm)	110	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)
From	A - Abenbury Way (Northern Arm)	0	13	8
	B - Ash Road N	75	0	24
	C - Abenbury Way (Southern Arm)	29	16	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.15	11.58	0.2	B	62	94
C-AB	0.04	7.21	0.0	A	20	30
C-A					101	151
A-B					8	12
A-C					521	782

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Ash Road N	T-Junction	Two-way		2.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Abenbury Way (Northern Arm)		ONE HOUR	✓	254	100.000
B - Ash Road N		ONE HOUR	✓	137	100.000
C - Abenbury Way (Southern Arm)		ONE HOUR	✓	281	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)
	A - Abenbury Way (Northern Arm)	0	4	250
	B - Ash Road N	10	0	127
	C - Abenbury Way (Southern Arm)	239	42	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)
	A - Abenbury Way (Northern Arm)	0	0	18
	B - Ash Road N	11	0	12
	C - Abenbury Way (Southern Arm)	5	11	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.24	8.29	0.3	A	126	189
C-AB	0.07	6.03	0.1	A	39	58
C-A					219	329
AB					4	6
A-C					229	344

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Ash Road N	T-Junction	Two-way		1.29	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Abenbury Way (Northern Arm)		ONE HOUR	✓	647	100.000
B - Ash Road N		ONE HOUR	✓	76	100.000
C - Abenbury Way (Southern Arm)		ONE HOUR	✓	146	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	10	637	
B - Ash Road N	23	0	53	
C - Abenbury Way (Southern Arm)	122	24	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	11	7	
B - Ash Road N	77	0	23	
C - Abenbury Way (Southern Arm)	28	14	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	12.44	0.3	B	70	105
C-AB	0.05	7.44	0.1	A	22	33
C-A					112	168
A-B					9	14
A-C					585	877

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Ash Road N	T-Junction	Two-way		2.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Abenbury Way (Northern Arm)		ONE HOUR	✓	281	100.000
B - Ash Road N		ONE HOUR	✓	152	100.000
C - Abenbury Way (Southern Arm)		ONE HOUR	✓	315	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	5	276	
B - Ash Road N	11	0	141	
C - Abenbury Way (Southern Arm)	269	46	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	0	17	
B - Ash Road N	10	0	12	
C - Abenbury Way (Southern Arm)	5	10	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.27	8.70	0.4	A	139	209
C-AB	0.07	6.10	0.1	A	42	63
C-A					247	370
AB					5	7
AC					253	380

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Ash Road N	T-Junction	Two-way		1.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Abenbury Way (Northern Arm)		ONE HOUR	✓	682	100.000
B - Ash Road N		ONE HOUR	✓	76	100.000
C - Abenbury Way (Southern Arm)		ONE HOUR	✓	146	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	10	672	
B - Ash Road N	23	0	53	
C - Abenbury Way (Southern Arm)	122	24	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	11	8	
B - Ash Road N	77	0	23	
C - Abenbury Way (Southern Arm)	28	14	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	12.78	0.3	B	70	105
C-AB	0.05	7.59	0.1	A	22	33
C-A					112	168
AB					9	14
AC					617	925

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Ash Road N	T-Junction	Two-way		2.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Abenbury Way (Northern Arm)		ONE HOUR	✓	292	100.000
B - Ash Road N		ONE HOUR	✓	152	100.000
C - Abenbury Way (Southern Arm)		ONE HOUR	✓	315	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	5	287	
B - Ash Road N	11	0	141	
C - Abenbury Way (Southern Arm)	269	46	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Abenbury Way (Northern Arm)	B - Ash Road N	C - Abenbury Way (Southern Arm)	
A - Abenbury Way (Northern Arm)	0	0	17	
B - Ash Road N	10	0	12	
C - Abenbury Way (Southern Arm)	5	10	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.27	8.77	0.4	A	139	209
C-AB	0.07	6.13	0.1	A	42	63
C-A					247	370
AB					5	7
AC					263	395

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: J12a-Abenbury-Coed-Clywedog.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 08:53:39

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Abenbury Way/Coed Aben Road/Clywedog Road N
Location	Wrexham
Site number	12a
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHClb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Coed Aben Road/Clywedog Road N	T-Junction	Two-way		4.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Coed Aben Road		Major
B	Clywedog Road N		Minor
C	Abenbury Way		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Abenbury Way	6.50		✓	3.50	110.0	✓	7.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Clywedog Road N	One lane	4.00	37	39

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	560	0.100	0.252	0.159	0.360
1	B-C	713	0.107	0.270	-	-
1	C-B	728	0.276	0.276	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road		ONE HOUR	✓	148	100.000
B - Clywedog Road N		ONE HOUR	✓	232	100.000
C - Abenbury Way		ONE HOUR	✓	568	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way	
From A - Coed Aben Road	0	16	132	
From B - Clywedog Road N	18	0	214	
From C - Abenbury Way	331	237	0	

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way	
From A - Coed Aben Road	0	23	27	
From B - Clywedog Road N	13	0	9	
From C - Abenbury Way	9	6	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.40	10.41	0.7	B	213	319
C-AB	0.38	9.06	0.7	A	218	326
C-A					304	455
A-B					15	22
A-C					121	182

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Coed Aben Road/Clywedog Road N	T-Junction	Two-way		4.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road		ONE HOUR	✓	315	100.000
B - Clywedog Road N		ONE HOUR	✓	217	100.000
C - Abenbury Way		ONE HOUR	✓	250	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	34	281
	B - Clywedog Road N	11	0	206
	C - Abenbury Way	102	148	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	13	6
	B - Clywedog Road N	38	0	10
	C - Abenbury Way	24	15	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.39	10.84	0.7	B	199	299
C-AB	0.26	8.80	0.4	A	136	204
C-A					94	140
AB					31	47
A-C					258	387

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Coed Aben Road/Clywedog Road N	T-Junction	Two-way		5.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road		ONE HOUR	✓	163	100.000
B - Clywedog Road N		ONE HOUR	✓	259	100.000
C - Abenbury Way		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	17	146
	B - Clywedog Road N	20	0	239
	C - Abenbury Way	371	266	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	21	26
	B - Clywedog Road N	11	0	8
	C - Abenbury Way	8	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.46	11.54	0.9	B	238	356
C-AB	0.43	9.87	0.8	A	244	367
C-A					340	510
AB					16	23
AC					134	201

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Coed Aben Road/Clywedog Road N	T-Junction	Two-way		5.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road		ONE HOUR	✓	352	100.000
B - Clywedog Road N		ONE HOUR	✓	242	100.000
C - Abenbury Way		ONE HOUR	✓	276	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	37	315
	B - Clywedog Road N	12	0	230
	C - Abenbury Way	112	164	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	12	5
	B - Clywedog Road N	33	0	10
	C - Abenbury Way	23	14	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.45	12.02	0.9	B	222	333
C-AB	0.29	9.31	0.5	A	150	226
C-A					103	154
AB					34	51
AC					289	434

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Coed Aben Road/Clywedog Road N	T-Junction	Two-way		6.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road		ONE HOUR	✓	163	100.000
B - Clywedog Road N		ONE HOUR	✓	281	100.000
C - Abenbury Way		ONE HOUR	✓	672	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	17	146
	B - Clywedog Road N	20	0	261
	C - Abenbury Way	371	301	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
From	A - Coed Aben Road	0	21	26
	B - Clywedog Road N	11	0	10
	C - Abenbury Way	8	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.50	12.59	1.1	B	258	387
C-AB	0.49	11.05	1.0	B	277	415
C-A					340	510
AB					16	23
AC					134	201

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Abenbury Way/Coed Aben Road/Clywedog Road N	T-Junction	Two-way		5.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road		ONE HOUR	✓	352	100.000
B - Clywedog Road N		ONE HOUR	✓	266	100.000
C - Abenbury Way		ONE HOUR	✓	287	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To		
	A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
A - Coed Aben Road	0	37	315
B - Clywedog Road N	12	0	254
C - Abenbury Way	112	175	0

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A - Coed Aben Road	B - Clywedog Road N	C - Abenbury Way
A - Coed Aben Road	0	12	5
B - Clywedog Road N	33	0	9
C - Abenbury Way	23	13	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.49	12.94	1.0	B	244	366
C-AB	0.31	9.49	0.5	A	161	241
C-A					103	154
AB					34	51
AC					289	434

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: J11b-Bridge-Redwither-Coed Aben.j9
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Report generation date: 22/11/2018 08:53:11

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Bridge Road/Redwither Road/Coed Aben Road
Location	Wrexham
Site number	11b
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Redwither Road/Coed Aben Road	T-Junction	Two-way		24.72	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Redwither Road		Major
B	Bridge Road		Minor
C	Coed Aben Road		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Coed Aben Road	6.80		✓	3.50	120.0	✓	7.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Bridge Road	One lane	4.30	66	60

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	598	0.105	0.266	0.167	0.379
1	B-C	748	0.111	0.280	-	-
1	C-B	734	0.275	0.275	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road		ONE HOUR	✓	163	100.000
B - Bridge Road		ONE HOUR	✓	381	100.000
C - Coed Aben Road		ONE HOUR	✓	279	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	96	67
	B - Bridge Road	325	0	56
	C - Coed Aben Road	83	196	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	19	20
	B - Bridge Road	8	0	30
	C - Coed Aben Road	12	12	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.85	48.98	5.3	E	350	524
C-AB	0.31	8.59	0.5	A	180	270
C-A					76	114
A-B					88	132
A-C					61	92

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Redwither Road/Coed Aben Road	T-Junction	Two-way		10.23	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road		ONE HOUR	✓	172	100.000
B - Bridge Road		ONE HOUR	✓	348	100.000
C - Coed Aben Road		ONE HOUR	✓	198	100.000

Origin-Destination Data

Demand (PCU/hr)

	From	To		
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
	A - Redwither Road	0	128	44
	B - Bridge Road	201	0	147
	C - Coed Aben Road	109	89	0

Vehicle Mix

Heavy Vehicle Percentages

	From	To		
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
	A - Redwither Road	0	9	26
	B - Bridge Road	11	0	4
	C - Coed Aben Road	30	14	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.66	19.32	2.0	C	319	479
C-AB	0.14	7.03	0.2	A	82	123
C-A					100	150
AB					117	176
A-C					40	61

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Redwither Road/Coed Aben Road	T-Junction	Two-way		53.96	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road		ONE HOUR	✓	182	100.000
B - Bridge Road		ONE HOUR	✓	428	100.000
C - Coed Aben Road		ONE HOUR	✓	311	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Redwither Road	B - Bridge Road	C - Coed Aben Road	
A - Redwither Road	0	107	75	
B - Bridge Road	366	0	62	
C - Coed Aben Road	93	218	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Redwither Road	B - Bridge Road	C - Coed Aben Road	
A - Redwither Road	0	18	19	
B - Bridge Road	7	0	29	
C - Coed Aben Road	12	11	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.98	111.46	14.0	F	393	589
C-AB	0.35	9.11	0.6	A	200	300
C-A					85	128
A-B					98	147
A-C					69	103

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Redwither Road/Coed Aben Road	T-Junction	Two-way		13.77	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road		ONE HOUR	✓	193	100.000
B - Bridge Road		ONE HOUR	✓	391	100.000
C - Coed Aben Road		ONE HOUR	✓	221	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	144	49
	B - Bridge Road	226	0	165
	C - Coed Aben Road	121	100	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	9	26
	B - Bridge Road	11	0	3
	C - Coed Aben Road	29	14	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.75	26.50	3.0	D	359	538
C-AB	0.16	7.23	0.2	A	92	138
C-A					111	167
A-B					132	198
A-C					45	67

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Redwither Road/Coed Aben Road	T-Junction	Two-way		53.96	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road		ONE HOUR	✓	182	100.000
B - Bridge Road		ONE HOUR	✓	428	100.000
C - Coed Aben Road		ONE HOUR	✓	311	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	107	75
	B - Bridge Road	366	0	62
	C - Coed Aben Road	93	218	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	18	19
	B - Bridge Road	7	0	29
	C - Coed Aben Road	12	11	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.98	111.46	14.0	F	393	589
C-AB	0.35	9.11	0.6	A	200	300
C-A					85	128
AB					98	147
A-C					69	103

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Redwither Road/Coed Aben Road	T-Junction	Two-way		13.77	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road		ONE HOUR	✓	193	100.000
B - Bridge Road		ONE HOUR	✓	391	100.000
C - Coed Aben Road		ONE HOUR	✓	221	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	144	49
	B - Bridge Road	226	0	165
	C - Coed Aben Road	121	100	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Redwither Road	B - Bridge Road	C - Coed Aben Road
From	A - Redwither Road	0	9	26
	B - Bridge Road	11	0	3
	C - Coed Aben Road	29	14	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.75	26.50	3.0	D	359	538
C-AB	0.16	7.23	0.2	A	92	138
C-A					111	167
A-B					132	198
A-C					45	67

Junctions 9
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Filename: J11a-Bridge N-Redwither.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 08:58:35

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Bridge Road N/Redwither Road
Location	Wrexham
Site number	11a
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road N/Redwither Road	T-Junction	Two-way		2.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Redwither Road (Western Arm)		Major
B	Bridge Road N		Minor
C	Redwither Road (Eastern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Redwither Road (Eastern Arm)	6.80			90.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Bridge Road N	One lane plus flare	10.00	5.70	4.40	3.20	3.20	✓	1.00	25	80

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	581	0.102	0.258	0.162	0.369
1	B-C	611	0.090	0.229	-	-
1	C-B	626	0.234	0.234	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road (Western Arm)		ONE HOUR	✓	83	100.000
B - Bridge Road N		ONE HOUR	✓	81	100.000
C - Redwither Road (Eastern Arm)		ONE HOUR	✓	174	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)
	From			
	A - Redwither Road (Western Arm)	0	10	73
	B - Bridge Road N	72	0	9
	C - Redwither Road (Eastern Arm)	163	11	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)
	From			
	A - Redwither Road (Western Arm)	0	0	14
	B - Bridge Road N	20	0	50
	C - Redwither Road (Eastern Arm)	19	38	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	9.72	0.0	A	8	12
B-A	0.15	9.69	0.2	A	66	99
C-AB	0.02	7.06	0.0	A	13	19
C-A					147	220
AB					9	14
AC					67	100

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road N/Redwither Road	T-Junction	Two-way		6.75	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road (Western Arm)		ONE HOUR	✓	109	100.000
B - Bridge Road N		ONE HOUR	✓	258	100.000
C - Redwither Road (Eastern Arm)		ONE HOUR	✓	178	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)
From	A - Redwither Road (Western Arm)	0	27	82
	B - Bridge Road N	241	0	17
	C - Redwither Road (Eastern Arm)	172	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)
From	A - Redwither Road (Western Arm)	0	50	24
	B - Bridge Road N	3	0	13
	C - Redwither Road (Eastern Arm)	13	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	9.75	0.1	A	16	23
B-A	0.51	14.40	1.0	B	221	332
C-AB	0.01	5.37	0.0	A	7	11
C-A					156	234
A-B					25	37
A-C					75	113

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road N/Redwither Road	T-Junction	Two-way		2.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road (Western Arm)		ONE HOUR	✓	93	100.000
B - Bridge Road N		ONE HOUR	✓	88	100.000
C - Redwither Road (Eastern Arm)		ONE HOUR	✓	194	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
A - Redwither Road (Western Arm)	0	11	82	
B - Bridge Road N	79	0	9	
C - Redwither Road (Eastern Arm)	182	12	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
A - Redwither Road (Western Arm)	0	0	14	
B - Bridge Road N	18	0	50	
C - Redwither Road (Eastern Arm)	18	33	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	9.84	0.0	A	8	12
B-A	0.17	9.82	0.2	A	72	109
C-AB	0.02	6.79	0.0	A	14	22
C-A					164	245
A-B					10	15
A-C					75	113

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road N/Redwither Road	T-Junction	Two-way		7.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road (Western Arm)		ONE HOUR	✓	121	100.000
B - Bridge Road N		ONE HOUR	✓	290	100.000
C - Redwither Road (Eastern Arm)		ONE HOUR	✓	200	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
A - Redwither Road (Western Arm)	0	30	91	
B - Bridge Road N	271	0	19	
C - Redwither Road (Eastern Arm)	193	7	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
A - Redwither Road (Western Arm)	0	50	23	
B - Bridge Road N	3	0	12	
C - Redwither Road (Eastern Arm)	13	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	10.77	0.1	B	17	26
B-A	0.58	17.00	1.4	C	249	373
C-AB	0.01	5.32	0.0	A	9	13
C-A					175	262
A-B					28	41
A-C					84	125

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road N/Redwither Road	T-Junction	Two-way		2.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road (Western Arm)		ONE HOUR	✓	93	100.000
B - Bridge Road N		ONE HOUR	✓	88	100.000
C - Redwither Road (Eastern Arm)		ONE HOUR	✓	194	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
A - Redwither Road (Western Arm)	0	11	82	
B - Bridge Road N	79	0	9	
C - Redwither Road (Eastern Arm)	182	12	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
A - Redwither Road (Western Arm)	0	0	14	
B - Bridge Road N	18	0	50	
C - Redwither Road (Eastern Arm)	18	33	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	9.84	0.0	A	8	12
B-A	0.17	9.82	0.2	A	72	109
C-AB	0.02	6.79	0.0	A	14	22
C-A					164	245
A-B					10	15
A-C					75	113

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road N/Redwither Road	T-Junction	Two-way		7.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Redwither Road (Western Arm)		ONE HOUR	✓	121	100.000
B - Bridge Road N		ONE HOUR	✓	290	100.000
C - Redwither Road (Eastern Arm)		ONE HOUR	✓	200	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
From A - Redwither Road (Western Arm)	0	30	91	
From B - Bridge Road N	271	0	19	
From C - Redwither Road (Eastern Arm)	193	7	0	

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Redwither Road (Western Arm)	B - Bridge Road N	C - Redwither Road (Eastern Arm)	
From A - Redwither Road (Western Arm)	0	50	23	
From B - Bridge Road N	3	0	12	
From C - Redwither Road (Eastern Arm)	13	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	10.77	0.1	B	17	26
B-A	0.58	17.00	1.4	C	249	373
C-AB	0.01	5.32	0.0	A	9	13
C-A					175	262
A-B					28	41
A-C					84	125

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: J10-Coed Aben.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 09:00:35

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Retail Access/Coed Aben Road
Location	Wrexham
Site number	10
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHClb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Retail Access/Coed Aben Road	T-Junction	Two-way		0.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Coed Aben Road (Eastern Arm)		Major
B	Retail Access		Minor
C	Coed Aben Road (Western Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Coed Aben Road (Western Arm)	7.00			85.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Retail Access	One lane	3.20	30	35

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	515	0.090	0.227	0.143	0.324
1	B-C	659	0.097	0.244	-	-
1	C-B	623	0.231	0.231	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road (Eastern Arm)		ONE HOUR	✓	138	100.000
B - Retail Access		ONE HOUR	✓	10	100.000
C - Coed Aben Road (Western Arm)		ONE HOUR	✓	302	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From	A - Coed Aben Road (Eastern Arm)	0	1	137
	B - Retail Access	3	0	7
	C - Coed Aben Road (Western Arm)	276	26	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From	A - Coed Aben Road (Eastern Arm)	0	0	27
	B - Retail Access	0	0	0
	C - Coed Aben Road (Western Arm)	12	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	6.71	0.0	A	9	14
C-AB	0.06	5.25	0.1	A	36	54
C-A					241	361
A-B					0.92	1
A-C					126	189

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Retail Access/Coed Aben Road	T-Junction	Two-way		0.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road (Eastern Arm)		ONE HOUR	✓	200	100.000
B - Retail Access		ONE HOUR	✓	34	100.000
C - Coed Aben Road (Western Arm)		ONE HOUR	✓	193	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From	A - Coed Aben Road (Eastern Arm)	0	5	195
	B - Retail Access	8	0	26
	C - Coed Aben Road (Western Arm)	190	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From	A - Coed Aben Road (Eastern Arm)	0	0	8
	B - Retail Access	0	0	0
	C - Coed Aben Road (Western Arm)	23	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.07	6.96	0.1	A	31	47
C-AB	0.01	5.52	0.0	A	4	6
C-A					173	260
AB					5	7
AC					179	268

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Retail Access/Coed Aben Road	T-Junction	Two-way		0.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road (Eastern Arm)		ONE HOUR	✓	152	100.000
B - Retail Access		ONE HOUR	✓	11	100.000
C - Coed Aben Road (Western Arm)		ONE HOUR	✓	337	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)	
A - Coed Aben Road (Eastern Arm)	0	1	151	
B - Retail Access	3	0	8	
C - Coed Aben Road (Western Arm)	308	29	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)	
A - Coed Aben Road (Eastern Arm)	0	0	26	
B - Retail Access	0	0	0	
C - Coed Aben Road (Western Arm)	12	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	6.73	0.0	A	10	15
C-AB	0.07	5.18	0.1	A	42	64
C-A					267	400
A-B					0.92	1
A-C					139	208

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Retail Access/Coed Aben Road	T-Junction	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road (Eastern Arm)		ONE HOUR	✓	225	100.000
B - Retail Access		ONE HOUR	✓	38	100.000
C - Coed Aben Road (Western Arm)		ONE HOUR	✓	212	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From				
	A - Coed Aben Road (Eastern Arm)	0	6	219
	B - Retail Access	9	0	29
	C - Coed Aben Road (Western Arm)	209	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From				
	A - Coed Aben Road (Eastern Arm)	0	0	8
	B - Retail Access	0	0	0
	C - Coed Aben Road (Western Arm)	22	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	7.13	0.1	A	35	52
C-AB	0.01	5.49	0.0	A	4	6
C-A					191	286
AB					6	8
AC					201	301

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Retail Access/Coed Aben Road	T-Junction	Two-way		0.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road (Eastern Arm)		ONE HOUR	✓	152	100.000
B - Retail Access		ONE HOUR	✓	11	100.000
C - Coed Aben Road (Western Arm)		ONE HOUR	✓	337	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From	A - Coed Aben Road (Eastern Arm)	0	1	151
	B - Retail Access	3	0	8
	C - Coed Aben Road (Western Arm)	308	29	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)
From	A - Coed Aben Road (Eastern Arm)	0	0	26
	B - Retail Access	0	0	0
	C - Coed Aben Road (Western Arm)	12	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	6.73	0.0	A	10	15
C-AB	0.07	5.18	0.1	A	42	64
C-A					267	400
AB					0.92	1
AC					139	208

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Retail Access/Coed Aben Road	T-Junction	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Coed Aben Road (Eastern Arm)		ONE HOUR	✓	225	100.000
B - Retail Access		ONE HOUR	✓	38	100.000
C - Coed Aben Road (Western Arm)		ONE HOUR	✓	212	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)	
A - Coed Aben Road (Eastern Arm)	0	6	219	
B - Retail Access	9	0	29	
C - Coed Aben Road (Western Arm)	209	3	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Coed Aben Road (Eastern Arm)	B - Retail Access	C - Coed Aben Road (Western Arm)	
A - Coed Aben Road (Eastern Arm)	0	0	8	
B - Retail Access	0	0	0	
C - Coed Aben Road (Western Arm)	22	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.08	7.13	0.1	A	35	52
C-AB	0.01	5.49	0.0	A	4	6
C-A					191	286
AB					6	8
AC					201	301

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J9-Sesswick-Bridge-Cefn.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 09:02:07

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Sesswick Way/Bridge Road S/Cefn Road
Location	Wrexham
Site number	9
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Sesswick Way/Bridge Road S/Cefn Road	Standard Roundabout		1, 2, 3	3.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Bridge Road S	
2	Sesswick Way	
3	Cefn Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Bridge Road S	6.96	6.96	0.0	36.2	50.0	28.9	
2 - Sesswick Way	4.68	8.53	10.3	30.5	50.0	32.8	
3 - Cefn Road	3.65	7.72	9.4	29.8	50.0	31.1	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Bridge Road S	0.704	2163
2 - Sesswick Way	0.661	1964
3 - Cefn Road	0.601	1644

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S		ONE HOUR	✓	275	100.000
2 - Sesswick Way		ONE HOUR	✓	523	100.000
3 - Cefn Road		ONE HOUR	✓	425	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	151	124
	2 - Sesswick Way	487	0	36
	3 - Cefn Road	341	84	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	34	5
	2 - Sesswick Way	7	0	6
	3 - Cefn Road	3	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S	0.14	2.39	0.2	A	252	379
2 - Sesswick Way	0.31	2.95	0.5	A	480	720
3 - Cefn Road	0.35	4.35	0.6	A	390	585

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Sesswick Way/Bridge Road S/Cefn Road	Standard Roundabout		1, 2, 3	3.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S		ONE HOUR	✓	950	100.000
2 - Sesswick Way		ONE HOUR	✓	187	100.000
3 - Cefn Road		ONE HOUR	✓	173	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	504	446
	2 - Sesswick Way	141	0	46
	3 - Cefn Road	114	59	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	6	1
	2 - Sesswick Way	18	0	5
	3 - Cefn Road	7	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S	0.49	3.48	1.0	A	872	1308
2 - Sesswick Way	0.13	2.86	0.2	A	172	257
3 - Cefn Road	0.12	2.79	0.1	A	159	238

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Sesswick Way/Bridge Road S/Cefn Road	Standard Roundabout		1, 2, 3	3.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S		ONE HOUR	✓	306	100.000
2 - Sesswick Way		ONE HOUR	✓	587	100.000
3 - Cefn Road		ONE HOUR	✓	479	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	167	139
	2 - Sesswick Way	547	0	40
	3 - Cefn Road	385	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	33	5
	2 - Sesswick Way	6	0	5
	3 - Cefn Road	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S	0.16	2.42	0.2	A	281	421
2 - Sesswick Way	0.35	3.14	0.6	A	539	808
3 - Cefn Road	0.41	4.92	0.7	A	440	659

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Sesswick Way/Bridge Road S/Cefn Road	Standard Roundabout		1, 2, 3	3.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S		ONE HOUR	✓	1069	100.000
2 - Sesswick Way		ONE HOUR	✓	208	100.000
3 - Cefn Road		ONE HOUR	✓	193	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	566	503
	2 - Sesswick Way	156	0	52
	3 - Cefn Road	127	66	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	6	1
	2 - Sesswick Way	16	0	4
	3 - Cefn Road	6	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S	0.56	3.98	1.3	A	981	1471
2 - Sesswick Way	0.14	2.97	0.2	A	191	286
3 - Cefn Road	0.14	2.84	0.2	A	177	266

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Sesswick Way/Bridge Road S/Cefn Road	Standard Roundabout		1, 2, 3	3.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S		ONE HOUR	✓	344	100.000
2 - Sesswick Way		ONE HOUR	✓	602	100.000
3 - Cefn Road		ONE HOUR	✓	522	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	177	167
	2 - Sesswick Way	562	0	40
	3 - Cefn Road	428	94	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	31	9
	2 - Sesswick Way	6	0	5
	3 - Cefn Road	5	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S	0.18	2.51	0.3	A	316	473
2 - Sesswick Way	0.36	3.24	0.6	A	552	829
3 - Cefn Road	0.45	5.39	0.9	A	479	718

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Sesswick Way/Bridge Road S/Cefn Road	Standard Roundabout		1, 2, 3	3.88	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S		ONE HOUR	✓	1116	100.000
2 - Sesswick Way		ONE HOUR	✓	212	100.000
3 - Cefn Road		ONE HOUR	✓	207	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	581	535
	2 - Sesswick Way	160	0	52
	3 - Cefn Road	141	66	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road S	2 - Sesswick Way	3 - Cefn Road
From	1 - Bridge Road S	0	6	2
	2 - Sesswick Way	16	0	4
	3 - Cefn Road	7	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S	0.58	4.22	1.4	A	1024	1536
2 - Sesswick Way	0.15	3.02	0.2	A	195	292
3 - Cefn Road	0.15	2.90	0.2	A	190	285

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J8-Bridge-Clywedog S.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 09:01:30

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Bridge Road S/Clywedog Road S
Location	Wrexham
Site number	8
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road S/Clywedog Road S	Standard Roundabout		1, 2, 3	2.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Bridge Road S (Northern Arm)	
2	Bridge Road S (Southern Arm)	
3	Clywedog Road S	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Bridge Road S (Northern Arm)	3.53	6.32	15.3	29.9	40.0	31.9	
2 - Bridge Road S (Southern Arm)	7.38	7.98	2.6	20.5	40.0	34.8	
3 - Clywedog Road S	4.41	7.34	12.0	22.0	40.0	31.9	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Bridge Road S (Northern Arm)	0.629	1619
2 - Bridge Road S (Southern Arm)	0.758	2304
3 - Clywedog Road S	0.667	1830

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S (Northern Arm)		ONE HOUR	✓	208	100.000
2 - Bridge Road S (Southern Arm)		ONE HOUR	✓	828	100.000
3 - Clywedog Road S		ONE HOUR	✓	75	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
	1 - Bridge Road S (Northern Arm)	0	200	8
	2 - Bridge Road S (Southern Arm)	494	6	328
	3 - Clywedog Road S	6	69	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
	1 - Bridge Road S (Northern Arm)	0	23	33
	2 - Bridge Road S (Southern Arm)	7	0	3
	3 - Clywedog Road S	20	11	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S (Northern Arm)	0.15	3.31	0.2	A	191	286
2 - Bridge Road S (Southern Arm)	0.40	2.73	0.7	A	760	1140
3 - Clywedog Road S	0.06	2.92	0.1	A	69	103

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road S/Clywedog Road S	Standard Roundabout		1, 2, 3	3.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S (Northern Arm)		ONE HOUR	✓	574	100.000
2 - Bridge Road S (Southern Arm)		ONE HOUR	✓	255	100.000
3 - Clywedog Road S		ONE HOUR	✓	388	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
From	1 - Bridge Road S (Northern Arm)	0	571	3
	2 - Bridge Road S (Southern Arm)	167	2	86
	3 - Clywedog Road S	11	377	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
From	1 - Bridge Road S (Northern Arm)	0	5	0
	2 - Bridge Road S (Southern Arm)	12	0	13
	3 - Clywedog Road S	22	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S (Northern Arm)	0.47	5.20	0.9	A	527	790
2 - Bridge Road S (Southern Arm)	0.12	2.00	0.2	A	234	351
3 - Clywedog Road S	0.25	2.89	0.3	A	356	534

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road S/Clywedog Road S	Standard Roundabout		1, 2, 3	3.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S (Northern Arm)		ONE HOUR	✓	232	100.000
2 - Bridge Road S (Southern Arm)		ONE HOUR	✓	933	100.000
3 - Clywedog Road S		ONE HOUR	✓	83	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
	1 - Bridge Road S (Northern Arm)	0	223	9
	2 - Bridge Road S (Southern Arm)	555	7	371
	3 - Clywedog Road S	7	76	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
	1 - Bridge Road S (Northern Arm)	0	22	29
	2 - Bridge Road S (Southern Arm)	6	0	3
	3 - Clywedog Road S	17	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S (Northern Arm)	0.16	3.37	0.2	A	213	319
2 - Bridge Road S (Southern Arm)	0.45	2.97	0.8	A	856	1284
3 - Clywedog Road S	0.06	3.00	0.1	A	76	114

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road S/Clywedog Road S	Standard Roundabout		1, 2, 3	4.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S (Northern Arm)		ONE HOUR	✓	646	100.000
2 - Bridge Road S (Southern Arm)		ONE HOUR	✓	285	100.000
3 - Clywedog Road S		ONE HOUR	✓	438	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
	1 - Bridge Road S (Northern Arm)	0	643	3
	2 - Bridge Road S (Southern Arm)	186		97
	3 - Clywedog Road S	12	426	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S
	1 - Bridge Road S (Northern Arm)	0	4	0
	2 - Bridge Road S (Southern Arm)	11	0	13
	3 - Clywedog Road S	20	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S (Northern Arm)	0.54	6.15	1.2	A	593	889
2 - Bridge Road S (Southern Arm)	0.14	2.02	0.2	A	262	392
3 - Clywedog Road S	0.28	3.05	0.4	A	402	603

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road S/Clywedog Road S	Standard Roundabout		1, 2, 3	3.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S (Northern Arm)		ONE HOUR	✓	251	100.000
2 - Bridge Road S (Southern Arm)		ONE HOUR	✓	991	100.000
3 - Clywedog Road S		ONE HOUR	✓	99	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S	
From				
1 - Bridge Road S (Northern Arm)	0	242	9	
2 - Bridge Road S (Southern Arm)	586	7	398	
3 - Clywedog Road S	7	92	0	

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S	
From				
1 - Bridge Road S (Northern Arm)	0	23	29	
2 - Bridge Road S (Southern Arm)	7	0	4	
3 - Clywedog Road S	17	14	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S (Northern Arm)	0.18	3.48	0.3	A	230	345
2 - Bridge Road S (Southern Arm)	0.48	3.15	1.0	A	909	1364
3 - Clywedog Road S	0.08	3.18	0.1	A	91	136

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road S/Clywedog Road S	Standard Roundabout		1, 2, 3	4.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road S (Northern Arm)		ONE HOUR	✓	671	100.000
2 - Bridge Road S (Southern Arm)		ONE HOUR	✓	305	100.000
3 - Clywedog Road S		ONE HOUR	✓	459	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S	
From				
1 - Bridge Road S (Northern Arm)	0	668	3	
2 - Bridge Road S (Southern Arm)	197	2	106	
3 - Clywedog Road S	12	447	0	

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1 - Bridge Road S (Northern Arm)	2 - Bridge Road S (Southern Arm)	3 - Clywedog Road S	
From				
1 - Bridge Road S (Northern Arm)	0	5	0	
2 - Bridge Road S (Southern Arm)	12	0	13	
3 - Clywedog Road S	20	3	0	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road S (Northern Arm)	0.56	6.62	1.3	A	616	924
2 - Bridge Road S (Southern Arm)	0.15	2.05	0.2	A	280	420
3 - Clywedog Road S	0.30	3.14	0.4	A	421	632

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J7-Bridge-Clywedog E-HMP.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 09:00:04

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Bridge Road/Clywedog Road E/HMP
Location	Wrexham
Site number	7
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Clywedog Road E/HMP	Standard Roundabout		1, 2, 3, 4	2.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Bridge Road (Northern Arm)	
2	HMP	
3	Bridge Road (Southern Arm)	
4	Clywedog Road E	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Bridge Road (Northern Arm)	4.50	8.35	6.2	26.5	44.0	29.9	
2 - HMP	2.61	6.30	14.2	26.7	44.0	26.9	
3 - Bridge Road (Southern Arm)	4.32	7.44	18.5	22.0	44.0	28.9	
4 - Clywedog Road E	3.94	6.18	2.5	17.2	44.0	36.2	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Bridge Road (Northern Arm)	0.650	1775
2 - HMP	0.586	1434
3 - Bridge Road (Southern Arm)	0.680	1939
4 - Clywedog Road E	0.549	1329

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	218	100.000
2 - HMP		ONE HOUR	✓	6	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	499	100.000
4 - Clywedog Road E		ONE HOUR	✓	25	100.000

Origin-Destination Data

Demand (PCU/hr)

	To
From	1 - Bridge Road (Northern Arm) 2 - HMP 3 - Bridge Road (Southern Arm) 4 - Clywedog Road E
1 - Bridge Road (Northern Arm)	0 21 182 15
2 - HMP	3 0 2 1
3 - Bridge Road (Southern Arm)	443 44 0 12
4 - Clywedog Road E	10 2 13 0

Vehicle Mix

Heavy Vehicle Percentages

	To
From	1 - Bridge Road (Northern Arm) 2 - HMP 3 - Bridge Road (Southern Arm) 4 - Clywedog Road E
1 - Bridge Road (Northern Arm)	0 5 26 36
2 - HMP	0 0 0 0
3 - Bridge Road (Southern Arm)	7 0 0 0
4 - Clywedog Road E	43 0 44 0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.14	2.99	0.2	A	200	300
2 - HMP	0.01	2.78	0.0	A	6	8
3 - Bridge Road (Southern Arm)	0.29	2.78	0.4	A	458	687
4 - Clywedog Road E	0.03	4.98	0.0	A	23	34

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Clywedog Road E/HMP	Standard Roundabout		1, 2, 3, 4	3.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	549	100.000
2 - HMP		ONE HOUR	✓	83	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	189	100.000
4 - Clywedog Road E		ONE HOUR	✓	42	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
From	1 - Bridge Road (Northern Arm)	0	10	520	19
	2 - HMP	23	0	58	2
	3 - Bridge Road (Southern Arm)	179	3	0	7
	4 - Clywedog Road E	28	0	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
From	1 - Bridge Road (Northern Arm)	0	11	5	27
	2 - HMP	5	0	0	0
	3 - Bridge Road (Southern Arm)	13	0	0	40
	4 - Clywedog Road E	17	0	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.34	3.27	0.5	A	504	756
2 - HMP	0.08	3.69	0.1	A	76	114
3 - Bridge Road (Southern Arm)	0.11	2.40	0.1	A	173	260
4 - Clywedog Road E	0.04	3.62	0.0	A	39	58

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Clywedog Road E/HMP	Standard Roundabout		1, 2, 3, 4	3.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	241	100.000
2 - HMP		ONE HOUR	✓	6	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	561	100.000
4 - Clywedog Road E		ONE HOUR	✓	27	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
From		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
	1 - Bridge Road (Northern Arm)	0	23	202	16
	2 - HMP	3	0	2	1
	3 - Bridge Road (Southern Arm)	497	50	0	14
	4 - Clywedog Road E	11	2	14	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
From		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
	1 - Bridge Road (Northern Arm)	0	5	25	33
	2 - HMP	0	0	0	0
	3 - Bridge Road (Southern Arm)	7	0	0	0
	4 - Clywedog Road E	38	0	40	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.15	3.02	0.2	A	221	332
2 - HMP	0.01	2.82	0.0	A	6	8
3 - Bridge Road (Southern Arm)	0.32	2.92	0.5	A	515	772
4 - Clywedog Road E	0.03	5.03	0.0	A	25	37

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Clywedog Road E/HMP	Standard Roundabout		1, 2, 3, 4	3.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	617	100.000
2 - HMP		ONE HOUR	✓	94	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	209	100.000
4 - Clywedog Road E		ONE HOUR	✓	46	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
From	1 - Bridge Road (Northern Arm)	0	11	586	20
	2 - HMP	26	0	66	2
	3 - Bridge Road (Southern Arm)	199	3	0	7
	4 - Clywedog Road E	31	0	15	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
From	1 - Bridge Road (Northern Arm)	0	10	4	25
	2 - HMP	4	0	0	0
	3 - Bridge Road (Southern Arm)	12	0	0	40
	4 - Clywedog Road E	15	0	15	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.39	3.49	0.7	A	566	849
2 - HMP	0.10	3.91	0.1	A	86	129
3 - Bridge Road (Southern Arm)	0.12	2.42	0.2	A	192	288
4 - Clywedog Road E	0.04	3.63	0.1	A	42	63

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Clywedog Road E/HMP	Standard Roundabout		1, 2, 3, 4	3.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	241	100.000
2 - HMP		ONE HOUR	✓	6	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	592	100.000
4 - Clywedog Road E		ONE HOUR	✓	46	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
From	1 - Bridge Road (Northern Arm)	0	23	202	16
	2 - HMP	3	0	2	1
	3 - Bridge Road (Southern Arm)	497	50	0	45
	4 - Clywedog Road E	11	2	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - Bridge Road (Northern Arm)	2 - HMP	3 - Bridge Road (Southern Arm)	4 - Clywedog Road E
From	1 - Bridge Road (Northern Arm)	0	5	25	33
	2 - HMP	0	0	0	0
	3 - Bridge Road (Southern Arm)	7	0	0	13
	4 - Clywedog Road E	38	0	38	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.15	3.05	0.2	A	221	332
2 - HMP	0.01	2.84	0.0	A	6	8
3 - Bridge Road (Southern Arm)	0.34	3.02	0.5	A	543	815
4 - Clywedog Road E	0.05	5.15	0.1	A	42	63

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Clywedog Road E/HMP	Standard Roundabout		1, 2, 3, 4	3.36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	617	100.000
2 - HMP		ONE HOUR	✓	94	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	220	100.000
4 - Clywedog Road E		ONE HOUR	✓	71	100.000

Origin-Destination Data

Demand (PCU/hr)

	To
	1 - Bridge Road (Northern Arm) 2 - HMP 3 - Bridge Road (Southern Arm) 4 - Clywedog Road E
From	
1 - Bridge Road (Northern Arm)	0 11 586 20
2 - HMP	26 0 66 2
3 - Bridge Road (Southern Arm)	199 3 0 18
4 - Clywedog Road E	31 0 40 0

Vehicle Mix

Heavy Vehicle Percentages

	To
	1 - Bridge Road (Northern Arm) 2 - HMP 3 - Bridge Road (Southern Arm) 4 - Clywedog Road E
From	
1 - Bridge Road (Northern Arm)	0 10 4 25
2 - HMP	4 0 0 0
3 - Bridge Road (Southern Arm)	12 0 0 29
4 - Clywedog Road E	15 0 14 0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.39	3.55	0.7	A	566	849
2 - HMP	0.10	3.98	0.1	A	86	129
3 - Bridge Road (Southern Arm)	0.13	2.44	0.2	A	202	303
4 - Clywedog Road E	0.07	3.70	0.1	A	65	98

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J6-Industrial Access-Bridge.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 08:59:16

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Industrial Access/Bridge Road
Location	Wrexham
Site number	6
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Industrial Access - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Industrial Access/Bridge Road	T-Junction	Two-way		0.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Bridge Road (Southern Arm)		Major
B	Industrial Access		Minor
C	Bridge Road (Northern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Bridge Road (Northern Arm)	8.60			250.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Industrial Access	One lane plus flare	10.00	4.00	3.20	3.20	3.20	✓	1.00	21	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	599	0.097	0.245	0.154	0.349
1	B-C	689	0.094	0.237	-	-
1	C-B	719	0.247	0.247	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Southern Arm)		ONE HOUR	✓	460	100.000
B - Industrial Access		ONE HOUR	✓	17	100.000
C - Bridge Road (Northern Arm)		ONE HOUR	✓	246	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	27	433
	B - Industrial Access	2	0	15
	C - Bridge Road (Northern Arm)	226	20	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	13	8
	B - Industrial Access	0	0	36
	C - Bridge Road (Northern Arm)	24	18	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.03	8.82	0.0	A	14	21
B-A	0.01	8.35	0.0	A	2	3
C-AB	0.04	5.93	0.1	A	26	39
C-A					200	300
AB					25	37
AC					397	596

1 Observed 2018, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Industrial Access - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Industrial Access/Bridge Road	T-Junction	Two-way		0.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Southern Arm)		ONE HOUR	✓	247	100.000
B - Industrial Access		ONE HOUR	✓	49	100.000
C - Bridge Road (Northern Arm)		ONE HOUR	✓	513	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)	
A - Bridge Road (Southern Arm)	0	7	240	
B - Industrial Access	36	0	13	
C - Bridge Road (Northern Arm)	505	8	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)	
A - Bridge Road (Southern Arm)	0	0	11	
B - Industrial Access	0	0	0	
C - Bridge Road (Northern Arm)	6	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	5.39	0.0	A	12	18
B-A	0.10	10.06	0.1	B	33	50
C-AB	0.02	4.11	0.0	A	15	22
C-A					456	684
A-B					6	10
A-C					220	330

2 Without Development 2033, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Industrial Access - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Industrial Access/Bridge Road	T-Junction	Two-way		0.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Southern Arm)		ONE HOUR	✓	464	100.000
B - Industrial Access		ONE HOUR	✓	18	100.000
C - Bridge Road (Northern Arm)		ONE HOUR	✓	272	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	27	437
	B - Industrial Access	2	0	16
	C - Bridge Road (Northern Arm)	250	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	13	9
	B - Industrial Access	0	0	33
	C - Bridge Road (Northern Arm)	23	16	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.03	8.66	0.0	A	15	22
B-A	0.01	8.46	0.0	A	2	3
C-AB	0.05	5.78	0.1	A	29	44
C-A					220	330
A-B					25	37
A-C					401	601

2 Without Development 2033, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Industrial Access - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Industrial Access/Bridge Road	T-Junction	Two-way		0.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Southern Arm)		ONE HOUR	✓	277	100.000
B - Industrial Access		ONE HOUR	✓	56	100.000
C - Bridge Road (Northern Arm)		ONE HOUR	✓	576	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	8	269
	B - Industrial Access	41	0	15
	C - Bridge Road (Northern Arm)	567	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	0	11
	B - Industrial Access	0	0	0
	C - Bridge Road (Northern Arm)	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	5.51	0.0	A	14	21
B-A	0.12	10.73	0.1	B	38	56
C-AB	0.02	4.01	0.0	A	18	27
C-A					511	766
A-B					7	11
A-C					247	370

3 With Development 2033, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Industrial Access - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Industrial Access/Bridge Road	T-Junction	Two-way		0.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Southern Arm)		ONE HOUR	✓	464	100.000
B - Industrial Access		ONE HOUR	✓	18	100.000
C - Bridge Road (Northern Arm)		ONE HOUR	✓	272	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	27	437
	B - Industrial Access	2	0	16
	C - Bridge Road (Northern Arm)	250	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	13	9
	B - Industrial Access	0	0	33
	C - Bridge Road (Northern Arm)	23	16	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.03	8.66	0.0	A	15	22
B-A	0.01	8.46	0.0	A	2	3
C-AB	0.05	5.78	0.1	A	29	44
C-A					220	330
A-B					25	37
A-C					401	601

3 With Development 2033, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Industrial Access - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Industrial Access/Bridge Road	T-Junction	Two-way		0.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Southern Arm)		ONE HOUR	✓	277	100.000
B - Industrial Access		ONE HOUR	✓	56	100.000
C - Bridge Road (Northern Arm)		ONE HOUR	✓	576	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	8	269
	B - Industrial Access	41	0	15
	C - Bridge Road (Northern Arm)	567	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Bridge Road (Southern Arm)	B - Industrial Access	C - Bridge Road (Northern Arm)
From	A - Bridge Road (Southern Arm)	0	0	11
	B - Industrial Access	0	0	0
	C - Bridge Road (Northern Arm)	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	5.51	0.0	A	14	21
B-A	0.12	10.73	0.1	B	38	56
C-AB	0.02	4.01	0.0	A	18	27
C-A					511	766
A-B					7	11
A-C					247	370

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J5-Spectrum-Bridge.j9

Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models

Report generation date: 22/11/2018 09:01:03

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Bridge Road/Spectrum Business Park
Location	Wrexham
Site number	5
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHClb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Spectrum Business Park	Standard Roundabout		1, 2, 3	2.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Bridge Road (Northern Arm)	
2	Spectrum Business Park	
3	Bridge Road (Southern Arm)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Bridge Road (Northern Arm)	3.90	6.79	19.5	27.1	40.0	31.2	
2 - Spectrum Business Park	3.88	6.90	11.0	27.6	40.0	29.7	
3 - Bridge Road (Southern Arm)	4.83	7.39	7.2	32.6	40.0	28.8	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Bridge Road (Northern Arm)	0.663	1791
2 - Spectrum Business Park	0.644	1687
3 - Bridge Road (Southern Arm)	0.683	1868

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	348	100.000
2 - Spectrum Business Park		ONE HOUR	✓	37	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	448	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	7	122	219
	2 - Spectrum Business Park	13	0	24
	3 - Bridge Road (Southern Arm)	364	81	3

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	40	1	22
	2 - Spectrum Business Park	18	0	26
	3 - Bridge Road (Southern Arm)	10	5	50

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.22	3.05	0.3	A	319	479
2 - Spectrum Business Park	0.03	2.99	0.0	A	34	51
3 - Bridge Road (Southern Arm)	0.27	2.88	0.4	A	411	617

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Spectrum Business Park	Standard Roundabout		1, 2, 3	2.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	450	100.000
2 - Spectrum Business Park		ONE HOUR	✓	205	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	253	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	0	15	435
	2 - Spectrum Business Park	128	0	77
	3 - Bridge Road (Southern Arm)	221	31	1

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	0	0	7
	2 - Spectrum Business Park	2	0	3
	3 - Bridge Road (Southern Arm)	11	7	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.28	3.02	0.4	A	413	619
2 - Spectrum Business Park	0.16	3.20	0.2	A	188	282
3 - Bridge Road (Southern Arm)	0.16	2.66	0.2	A	232	348

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Spectrum Business Park	Standard Roundabout		1, 2, 3	3.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	388	100.000
2 - Spectrum Business Park		ONE HOUR	✓	40	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	501	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	7	138	243
	2 - Spectrum Business Park	14	0	26
	3 - Bridge Road (Southern Arm)	407	91	3

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	40	1	22
	2 - Spectrum Business Park	17	0	24
	3 - Bridge Road (Southern Arm)	9	5	50

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.25	3.15	0.4	A	356	534
2 - Spectrum Business Park	0.03	2.98	0.0	A	37	55
3 - Bridge Road (Southern Arm)	0.30	3.00	0.5	A	460	690

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Spectrum Business Park	Standard Roundabout		1, 2, 3	3.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	506	100.000
2 - Spectrum Business Park		ONE HOUR	✓	231	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	284	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	0	17	489
	2 - Spectrum Business Park	144	0	87
	3 - Bridge Road (Southern Arm)	248	35	1

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	0	0	7
	2 - Spectrum Business Park	2	0	2
	3 - Bridge Road (Southern Arm)	11	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.32	3.17	0.5	A	464	696
2 - Spectrum Business Park	0.19	3.39	0.2	A	212	318
3 - Bridge Road (Southern Arm)	0.18	2.74	0.2	A	261	391

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Spectrum Business Park	Standard Roundabout		1, 2, 3	3.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	388	100.000
2 - Spectrum Business Park		ONE HOUR	✓	40	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	501	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	7	138	243
	2 - Spectrum Business Park	14	0	26
	3 - Bridge Road (Southern Arm)	407	91	3

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	40	1	22
	2 - Spectrum Business Park	17	0	24
	3 - Bridge Road (Southern Arm)	9	5	50

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.25	3.15	0.4	A	356	534
2 - Spectrum Business Park	0.03	2.98	0.0	A	37	55
3 - Bridge Road (Southern Arm)	0.30	3.00	0.5	A	460	690

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bridge Road/Spectrum Business Park	Standard Roundabout		1, 2, 3	3.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bridge Road (Northern Arm)		ONE HOUR	✓	506	100.000
2 - Spectrum Business Park		ONE HOUR	✓	231	100.000
3 - Bridge Road (Southern Arm)		ONE HOUR	✓	284	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	0	17	489
	2 - Spectrum Business Park	144	0	87
	3 - Bridge Road (Southern Arm)	248	35	1

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Bridge Road (Northern Arm)	2 - Spectrum Business Park	3 - Bridge Road (Southern Arm)
From	1 - Bridge Road (Northern Arm)	0	0	7
	2 - Spectrum Business Park	2	0	2
	3 - Bridge Road (Southern Arm)	11	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bridge Road (Northern Arm)	0.32	3.17	0.5	A	464	696
2 - Spectrum Business Park	0.19	3.39	0.2	A	212	318
3 - Bridge Road (Southern Arm)	0.18	2.74	0.2	A	261	391

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J4-Gourmet-Barclays-Bridge.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 09:02:50

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Bridge Road/Gourmet Access/Barclays Access
Location	Wrexham
Site number	4
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Gourmet Access/Barclays Access	Crossroads	Two-way		0.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Bridge Road (Northern Arm)		Major
B	Barclays Bank Access		Minor
C	Bridge Road (Southern Arm)		Major
D	Gourmet Access		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Bridge Road (Northern Arm)	6.00			80.0	✓	0.00
C - Bridge Road (Southern Arm)	6.00			60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Barclays Bank Access	One lane	3.20	18	20
D - Gourmet Access	One lane	3.20	19	18

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	620	-	-	-	-	-	-	0.240	0.343	0.240	-	-	-
1	B-A	503	0.092	0.232	0.232	-	-	-	0.146	0.331	-	0.232	0.232	0.116
1	B-C	649	0.100	0.252	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	503	0.092	0.232	0.232	-	-	-	0.146	0.331	0.146	-	-	-
1	B-D, offside lane	503	0.092	0.232	0.232	-	-	-	0.146	0.331	0.146	-	-	-
1	C-B	609	0.236	0.236	0.337	-	-	-	-	-	-	-	-	-
1	D-A	648	-	-	-	-	-	-	0.251	-	0.099	-	-	-
1	D-B, nearside lane	502	0.146	0.146	0.330	-	-	-	0.231	0.231	0.092	-	-	-
1	D-B, offside lane	502	0.146	0.146	0.330	-	-	-	0.231	0.231	0.092	-	-	-
1	D-C	502	-	0.146	0.330	0.116	0.231	0.231	0.231	0.231	0.092	-	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Northern Arm)		ONE HOUR	✓	349	100.000
B - Barclays Bank Access		ONE HOUR	✓	0	100.000
C - Bridge Road (Southern Arm)		ONE HOUR	✓	384	100.000
D - Gourmet Access		ONE HOUR	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	346	3
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	380	0	0	4
	D - Gourmet Access	1	0	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	14	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	10	0	0	0
	D - Gourmet Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
ABCD	0.01	5.20	0.0	A	5	7
A-B					0	0
A-C					315	473
D-ABD	0.00	0.00	0.0	A	0	0
C-ABD	0.00	0.00	0.0	A	0	0
C-D					4	6
C-A					349	523

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Gourmet Access/Barclays Access	Crossroads	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Northern Arm)		ONE HOUR	✓	449	100.000
B - Barclays Bank Access		ONE HOUR	✓	0	100.000
C - Bridge Road (Southern Arm)		ONE HOUR	✓	349	100.000
D - Gourmet Access		ONE HOUR	✓	1	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	449	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	348	0	0	1
	D - Gourmet Access	0	0	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	7	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	8	0	0	0
	D - Gourmet Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.00	0.00	0.0	A	0	0
AB					0	0
A-C					412	618
D-ABC	0.00	0.00	0.0	A	0	0
C-ABD	0.00	0.00	0.0	A	0	0
C-D					0.92	1
C-A					319	479

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Gourmet Access/Barclays Access	Crossroads	Two-way		0.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Northern Arm)		ONE HOUR	✓	389	100.000
B - Barclays Bank Access		ONE HOUR	✓	0	100.000
C - Bridge Road (Southern Arm)		ONE HOUR	✓	429	100.000
D - Gourmet Access		ONE HOUR	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From				
A - Bridge Road (Northern Arm)	0	0	386	3
B - Barclays Bank Access	0	0	0	0
C - Bridge Road (Southern Arm)	424	0	0	5
D - Gourmet Access	1	0	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	14	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	10	0	0	0
	D - Gourmet Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.01	5.11	0.0	A	5	8
A-B					0	0
A-C					352	528
D-ABC	0.00	0.00	0.0	A	0	0
C-ABD	0.00	0.00	0.0	A	0	0
C-D					5	7
C-A					389	584

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Gourmet Access/Barclays Access	Crossroads	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Northern Arm)		ONE HOUR	✓	505	100.000
B - Barclays Bank Access		ONE HOUR	✓	0	100.000
C - Bridge Road (Southern Arm)		ONE HOUR	✓	392	100.000
D - Gourmet Access		ONE HOUR	✓	1	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	505	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	391	0	0	1
	D - Gourmet Access	0	0	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	6	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	7	0	0	0
	D - Gourmet Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.00	0.00	0.0	A	0	0
A-B					0	0
A-C					463	695
D-ABC	0.00	0.00	0.0	A	0	0
C-ABD	0.00	0.00	0.0	A	0	0
C-D					0.92	1
C-A					359	538

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Gourmet Access/Barclays Access	Crossroads	Two-way		0.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Northern Arm)		ONE HOUR	✓	389	100.000
B - Barclays Bank Access		ONE HOUR	✓	0	100.000
C - Bridge Road (Southern Arm)		ONE HOUR	✓	429	100.000
D - Gourmet Access		ONE HOUR	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	386	3
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	424	0	0	5
	D - Gourmet Access	1	0	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	14	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	10	0	0	0
	D - Gourmet Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.01	5.11	0.0	A	5	8
A-B					0	0
A-C					352	528
D-ABC	0.00	0.00	0.0	A	0	0
C-ABD	0.00	0.00	0.0	A	0	0
C-D					5	7
C-A					389	584

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bridge Road/Gourmet Access/Barclays Access	Crossroads	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bridge Road (Northern Arm)		ONE HOUR	✓	505	100.000
B - Barclays Bank Access		ONE HOUR	✓	0	100.000
C - Bridge Road (Southern Arm)		ONE HOUR	✓	392	100.000
D - Gourmet Access		ONE HOUR	✓	1	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
From	A - Bridge Road (Northern Arm)	0	0	505	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	391	0	0	1
	D - Gourmet Access	0	0	1	0

Vehicle Mix

Heavy Vehicle Percentages

From		To			
		A - Bridge Road (Northern Arm)	B - Barclays Bank Access	C - Bridge Road (Southern Arm)	D - Gourmet Access
	A - Bridge Road (Northern Arm)	0	0	6	0
	B - Barclays Bank Access	0	0	0	0
	C - Bridge Road (Southern Arm)	7	0	0	0
	D - Gourmet Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.00	0.00	0.0	A	0	0
A-B					0	0
A-C					463	695
D-ABC	0.00	0.00	0.0	A	0	0
C-ABD	0.00	0.00	0.0	A	0	0
C-D					0.92	1
C-A					359	538

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: J3-Clywedog S-Clywedog N.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 09:04:02

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Clywedog Road S/Clywedog Road N
Location	Wrexham
Site number	3
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road N	T-Junction	Two-way		7.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road N (Eastern Arm)		Major
B	Clywedog Road S		Minor
C	Clywedog Road N (Western Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road N (Western Arm)	7.50			200.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Clywedog Road S	One lane plus flare	10.00	5.20	3.40	3.20	3.20	✓	1.00	25	22

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	479	0.082	0.206	0.130	0.294
1	B-C	698	0.100	0.253	-	-
1	C-B	690	0.250	0.250	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	21	100.000
B - Clywedog Road S		ONE HOUR	✓	254	100.000
C - Clywedog Road N (Western Arm)		ONE HOUR	✓	237	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	1	20	
B - Clywedog Road S	14	0	240	
C - Clywedog Road N (Western Arm)	50	187	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	0	43	
B - Clywedog Road S	17	0	9	
C - Clywedog Road N (Western Arm)	6	7	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.39	9.29	0.7	A	220	330
B-A	0.04	11.46	0.0	B	13	19
C-AB	0.31	7.81	0.5	A	184	276
C-A					34	51
A-B					0.92	1
A-C					18	28

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road N	T-Junction	Two-way		7.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	55	100.000
B - Clywedog Road S		ONE HOUR	✓	209	100.000
C - Clywedog Road N (Western Arm)		ONE HOUR	✓	268	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)
A - Clywedog Road N (Eastern Arm)		0	13	42
B - Clywedog Road S		4	0	205
C - Clywedog Road N (Western Arm)		21	247	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)
A - Clywedog Road N (Eastern Arm)		0	8	17
B - Clywedog Road S		0	0	8
C - Clywedog Road N (Western Arm)		17	5	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.33	8.52	0.5	A	188	282
B-A	0.01	9.91	0.0	A	4	6
C-AB	0.41	9.28	0.7	A	233	350
C-A					13	19
A-B					12	18
A-C					39	58

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road N	T-Junction	Two-way		8.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	22	100.000
B - Clywedog Road S		ONE HOUR	✓	284	100.000
C - Clywedog Road N (Western Arm)		ONE HOUR	✓	266	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	1	21	
B - Clywedog Road S	15	0	269	
C - Clywedog Road N (Western Arm)	56	210	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	0	40	
B - Clywedog Road S	15	0	8	
C - Clywedog Road N (Western Arm)	6	7	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.43	10.02	0.8	B	247	370
B-A	0.05	11.95	0.1	B	14	21
C-AB	0.35	8.22	0.6	A	208	312
C-A					36	54
A-B					0.92	1
A-C					19	29

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road N	T-Junction	Two-way		8.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	60	100.000
B - Clywedog Road S		ONE HOUR	✓	235	100.000
C - Clywedog Road N (Western Arm)		ONE HOUR	✓	302	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	14	46	
B - Clywedog Road S	5	0	230	
C - Clywedog Road N (Western Arm)	23	279	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	8	15	
B - Clywedog Road S	0	0	8	
C - Clywedog Road N (Western Arm)	15	4	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.37	9.06	0.6	A	211	317
B-A	0.02	10.44	0.0	B	5	7
C-AB	0.46	10.20	0.9	B	264	397
C-A					13	19
A-B					13	19
A-C					42	63

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road N	T-Junction	Two-way		8.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	29	100.000
B - Clywedog Road S		ONE HOUR	✓	299	100.000
C - Clywedog Road N (Western Arm)		ONE HOUR	✓	301	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)
From				
	A - Clywedog Road N (Eastern Arm)	0	1	28
	B - Clywedog Road S	15	0	284
	C - Clywedog Road N (Western Arm)	69	232	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)
From				
	A - Clywedog Road N (Eastern Arm)	0	0	40
	B - Clywedog Road S	15	0	9
	C - Clywedog Road N (Western Arm)	8	8	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.46	10.60	0.9	B	261	391
B-A	0.05	12.53	0.1	B	14	21
C-AB	0.39	8.76	0.7	A	234	351
C-A					42	63
A-B					0.92	1
A-C					26	39

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road N	T-Junction	Two-way		8.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road N (Eastern Arm)		ONE HOUR	✓	69	100.000
B - Clywedog Road S		ONE HOUR	✓	250	100.000
C - Clywedog Road N (Western Arm)		ONE HOUR	✓	313	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	14	55	
B - Clywedog Road S	5	0	245	
C - Clywedog Road N (Western Arm)	26	287	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road N (Eastern Arm)	B - Clywedog Road S	C - Clywedog Road N (Western Arm)	
A - Clywedog Road N (Eastern Arm)	0	8	12	
B - Clywedog Road S	0	0	8	
C - Clywedog Road N (Western Arm)	13	4	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.40	9.48	0.7	A	225	337
B-A	0.02	10.72	0.0	B	5	7
C-AB	0.48	10.50	1.0	B	273	410
C-A					14	21
A-B					13	19
A-C					50	76

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: J2b-Clywedog E-Clywedog E.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 09:05:59

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Clywedog Road E/Clywedog Road E
Location	Wrexham
Site number	2b
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road E	T-Junction	Two-way		1.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road E (Eastern Arm)		Major
B	Clywedog Road E		Minor
C	Clywedog Road E (Western Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road E (Western Arm)	6.70			200.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Clywedog Road E	One lane	3.70	19	17

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	527	0.093	0.235	0.148	0.336
1	B-C	679	0.101	0.255	-	-
1	C-B	690	0.259	0.259	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	26	100.000
B - Clywedog Road E		ONE HOUR	✓	7	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	26	100.000

Origin-Destination Data

Demand (PCU/hr)

	To
From	
A - Clywedog Road E (Eastern Arm)	0
B - Clywedog Road E	4
C - Clywedog Road E (Western Arm)	14

Vehicle Mix

Heavy Vehicle Percentages

	To
From	
A - Clywedog Road E (Eastern Arm)	0
B - Clywedog Road E	0
C - Clywedog Road E (Western Arm)	17

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	5.66	0.0	A	6	10
C-AB	0.02	5.32	0.0	A	11	17
C-A					13	19
A-B					4	6
AC					20	30

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road E	T-Junction	Two-way		1.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	12	100.000
B - Clywedog Road E		ONE HOUR	✓	13	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	25	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	2	10	
B - Clywedog Road E	4	0	9	
C - Clywedog Road E (Western Arm)	25	0	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	0	11	
B - Clywedog Road E	0	0	0	
C - Clywedog Road E (Western Arm)	4	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	5.95	0.0	A	12	18
C-AB	0.00	0.00	0.0	A	0	0
C-A					23	34
AB					2	3
AC					9	14

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road E	T-Junction	Two-way		1.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	29	100.000
B - Clywedog Road E		ONE HOUR	✓	8	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	30	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	5	24	
B - Clywedog Road E	1	0	7	
C - Clywedog Road E (Western Arm)	16	14	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	0	20	
B - Clywedog Road E	0	0	0	
C - Clywedog Road E (Western Arm)	14	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	5.64	0.0	A	7	11
C-AB	0.02	5.34	0.0	A	13	20
C-A					14	22
AB					5	7
AC					22	33

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road E	T-Junction	Two-way		1.51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	13	100.000
B - Clywedog Road E		ONE HOUR	✓	14	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	2	11	
B - Clywedog Road E	4	0	10	
C - Clywedog Road E (Western Arm)	28	0	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	0	10	
B - Clywedog Road E	0	0	0	
C - Clywedog Road E (Western Arm)	4	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	5.93	0.0	A	13	19
C-AB	0.00	0.00	0.0	A	0	0
C-A					26	39
AB					2	3
AC					10	15

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road E	T-Junction	Two-way		1.38	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	42	100.000
B - Clywedog Road E		ONE HOUR	✓	8	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	39	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	5	37	
B - Clywedog Road E	1	0	7	
C - Clywedog Road E (Western Arm)	25	14	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	0	19	
B - Clywedog Road E	0	0	0	
C - Clywedog Road E (Western Arm)	19	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	5.68	0.0	A	7	11
C-AB	0.02	5.34	0.0	A	13	20
C-A					22	34
AB					5	7
AC					34	51

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road E	T-Junction	Two-way		0.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	19	100.000
B - Clywedog Road E		ONE HOUR	✓	11	100.000
C - Clywedog Road E (Western Arm)		ONE HOUR	✓	37	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	2	17	
B - Clywedog Road E	1	0	10	
C - Clywedog Road E (Western Arm)	37	0	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Eastern Arm)	B - Clywedog Road E	C - Clywedog Road E (Western Arm)	
A - Clywedog Road E (Eastern Arm)	0	0	13	
B - Clywedog Road E	0	0	0	
C - Clywedog Road E (Western Arm)	6	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	5.59	0.0	A	10	15
C-AB	0.00	0.00	0.0	A	0	0
C-A					34	51
AB					2	3
AC					16	23

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J2a-Clywedog E-Clywedog N.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 09:03:21

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Clywedog Road E/Clywedog Road N
Location	Wrexham
Site number	2a
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road N	T-Junction	Two-way		3.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road E (Western Arm)		Major
B	Clywedog Road N		Minor
C	Clywedog Road E (Eastern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road E (Eastern Arm)	6.50			200.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Clywedog Road N	One lane plus flare	10.00	6.00	3.90	3.60	3.60	✓	1.00	20	29

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	532	0.095	0.240	0.151	0.342
1	B-C	727	0.109	0.276	-	-
1	C-B	690	0.261	0.261	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Western Arm)		ONE HOUR	✓	14	100.000
B - Clywedog Road N		ONE HOUR	✓	23	100.000
C - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	42	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)
From	A - Clywedog Road E (Western Arm)	0	5	9
	B - Clywedog Road N	9	0	14
	C - Clywedog Road E (Eastern Arm)	26	16	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)
From	A - Clywedog Road E (Western Arm)	0	0	29
	B - Clywedog Road N	0	0	27
	C - Clywedog Road E (Eastern Arm)	18	23	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.50	0.0	A	13	19
B-A	0.02	7.07	0.0	A	8	12
C-AB	0.03	6.46	0.0	A	15	23
C-A					23	35
A-B					5	7
A-C					8	12

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road N	T-Junction	Two-way		2.80	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Western Arm)		ONE HOUR	✓	25	100.000
B - Clywedog Road N		ONE HOUR	✓	27	100.000
C - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	17	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)
	A - Clywedog Road E (Western Arm)	0	6	19
	B - Clywedog Road N	6	0	21
	C - Clywedog Road E (Eastern Arm)	12	5	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)
	A - Clywedog Road E (Western Arm)	0	0	6
	B - Clywedog Road N	0	0	5
	C - Clywedog Road E (Eastern Arm)	9	25	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.03	5.52	0.0	A	19	29
B-A	0.01	7.33	0.0	A	6	8
C-AB	0.01	6.55	0.0	A	5	7
C-A					11	16
A-B					6	8
A-C					17	26

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road N	T-Junction	Two-way		3.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Western Arm)		ONE HOUR	✓	16	100.000
B - Clywedog Road N		ONE HOUR	✓	25	100.000
C - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	46	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	6	10	
B - Clywedog Road N	10	0	15	
C - Clywedog Road E (Eastern Arm)	29	17	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	0	25	
B - Clywedog Road N	0	0	25	
C - Clywedog Road E (Eastern Arm)	16	21	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.41	0.0	A	14	21
B-A	0.02	7.09	0.0	A	9	14
C-AB	0.03	6.36	0.0	A	16	24
C-A					26	39
A-B					6	8
A-C					9	14

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road N	T-Junction	Two-way		2.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Western Arm)		ONE HOUR	✓	28	100.000
B - Clywedog Road N		ONE HOUR	✓	30	100.000
C - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	18	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	7	21	
B - Clywedog Road N	7	0	23	
C - Clywedog Road E (Eastern Arm)	13	5	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	0	5	
B - Clywedog Road N	0	0	5	
C - Clywedog Road E (Eastern Arm)	8	25	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	5.53	0.0	A	21	32
B-A	0.02	7.33	0.0	A	6	10
C-AB	0.01	6.55	0.0	A	5	7
C-A					12	18
A-B					6	10
A-C					19	29

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road N	T-Junction	Two-way		3.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Western Arm)		ONE HOUR	✓	25	100.000
B - Clywedog Road N		ONE HOUR	✓	35	100.000
C - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	77	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	6	19	
B - Clywedog Road N	10	0	25	
C - Clywedog Road E (Eastern Arm)	42	35	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	0	27	
B - Clywedog Road N	0	0	32	
C - Clywedog Road E (Eastern Arm)	17	21	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	7.03	0.1	A	23	34
B-A	0.02	7.50	0.0	A	9	14
C-AB	0.06	6.47	0.1	A	34	51
C-A					37	55
A-B					6	8
A-C					17	26

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road E/Clywedog Road N	T-Junction	Two-way		3.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road E (Western Arm)		ONE HOUR	✓	37	100.000
B - Clywedog Road N		ONE HOUR	✓	46	100.000
C - Clywedog Road E (Eastern Arm)		ONE HOUR	✓	29	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	7	30	
B - Clywedog Road N	7	0	39	
C - Clywedog Road E (Eastern Arm)	19	10	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road E (Western Arm)	B - Clywedog Road N	C - Clywedog Road E (Eastern Arm)	
A - Clywedog Road E (Western Arm)	0	0	7	
B - Clywedog Road N	0	0	8	
C - Clywedog Road E (Eastern Arm)	12	25	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.06	5.86	0.1	A	36	54
B-A	0.02	7.56	0.0	A	6	10
C-AB	0.02	6.59	0.0	A	9	14
C-A					17	26
A-B					6	10
A-C					28	41

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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Filename: J1-Clywedog E-Clywedog S.j9
Path: N:\Projects 2018\P18047 - Wrexham Ind Est - Scoping\6.Technical\Models
Report generation date: 22/11/2018 08:51:05

- »1 Observed 2018, AM
- »1 Observed 2018, PM
- »2 Without Development 2033, AM
- »2 Without Development 2033, PM
- »3 With Development 2033, AM
- »3 With Development 2033, PM

File summary

File Description

Title	Clywedog Road S/Clywedog Road E
Location	Wrexham
Site number	1
Date	07/11/2018
Version	
Status	Final
Identifier	
Client	FI Real Estate
Jobnumber	P18047
Enumerator	GHCLb.gaze
Description	Checked by D. Stoddart

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

1 Observed 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road E	T-Junction	Two-way		0.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Clywedog Road S (Northern Arm)		Major
B	Clywedog Road E		Minor
C	Clywedog Road S (Southern Arm)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Clywedog Road S (Southern Arm)	6.50			200.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Clywedog Road E	One lane plus flare	10.00	6.50	4.50	3.80	3.50	✓	1.00	30	25

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	498	0.089	0.224	0.141	0.320
1	B-C	706	0.106	0.268	-	-
1	C-B	690	0.261	0.261	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	1 Observed 2018	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	176	100.000
B - Clywedog Road E		ONE HOUR	✓	17	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	259	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	16	160
	B - Clywedog Road E	6	0	11
	C - Clywedog Road S (Southern Arm)	230	29	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
	A - Clywedog Road S (Northern Arm)	0	0	8
	B - Clywedog Road E	0	0	10
	C - Clywedog Road S (Southern Arm)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.16	0.0	A	10	15
B-A	0.02	8.91	0.0	A	6	8
C-AB	0.06	4.95	0.1	A	37	55
C-A					201	301
A-B					15	22
A-C					147	220

1 Observed 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road E	T-Junction	Two-way		1.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	1 Observed 2018	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	249	100.000
B - Clywedog Road E		ONE HOUR	✓	62	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	180	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
A - Clywedog Road S (Northern Arm)		0	3	246
B - Clywedog Road E		17	0	45
C - Clywedog Road S (Southern Arm)		166	14	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
A - Clywedog Road S (Northern Arm)		0	50	6
B - Clywedog Road E		13	0	5
C - Clywedog Road S (Southern Arm)		11	27	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.08	6.36	0.1	A	41	62
B-A	0.05	10.87	0.1	B	16	23
C-AB	0.03	6.30	0.0	A	16	25
C-A					149	223
A-B					3	4
A-C					226	339

2 Without Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road E	T-Junction	Two-way		0.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2 Without Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	178	100.000
B - Clywedog Road E		ONE HOUR	✓	19	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	292	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
From	A - Clywedog Road S (Northern Arm)	0	16	162
	B - Clywedog Road E	7	0	12
	C - Clywedog Road S (Southern Arm)	259	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
From	A - Clywedog Road S (Northern Arm)	0	0	9
	B - Clywedog Road E	0	0	9
	C - Clywedog Road S (Southern Arm)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.17	0.0	A	11	17
B-A	0.02	9.03	0.0	A	6	10
C-AB	0.07	4.89	0.1	A	44	65
C-A					224	336
A-B					15	22
A-C					149	223

2 Without Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road E	T-Junction	Two-way		1.20	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2 Without Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	280	100.000
B - Clywedog Road E		ONE HOUR	✓	69	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	201	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)	
A - Clywedog Road S (Northern Arm)	0	3	277	
B - Clywedog Road E	19	0	50	
C - Clywedog Road S (Southern Arm)	186	15	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)	
A - Clywedog Road S (Northern Arm)	0	50	6	
B - Clywedog Road E	12	0	4	
C - Clywedog Road S (Southern Arm)	10	25	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.09	6.51	0.1	A	46	69
B-A	0.05	11.10	0.1	B	17	26
C-AB	0.03	6.16	0.0	A	18	27
C-A					166	249
A-B					3	4
A-C					254	381

3 With Development 2033, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road E	T-Junction	Two-way		0.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	3 With Development 2033	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	200	100.000
B - Clywedog Road E		ONE HOUR	✓	24	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	302	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
	A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)	
A - Clywedog Road S (Northern Arm)	0	24	176	
B - Clywedog Road E	12	0	12	
C - Clywedog Road S (Southern Arm)	269	33	0	

Vehicle Mix

Heavy Vehicle Percentages

From	To			
	A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)	
A - Clywedog Road S (Northern Arm)	0	4	9	
B - Clywedog Road E	9	0	9	
C - Clywedog Road S (Southern Arm)	5	0	0	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.53	0.0	A	11	17
B-A	0.03	9.65	0.0	A	11	17
C-AB	0.07	4.90	0.1	A	44	67
C-A					233	349
A-B					22	33
A-C					162	242

3 With Development 2033, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Clywedog Road S/Clywedog Road E	T-Junction	Two-way		1.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	3 With Development 2033	PM	ONE HOUR	16:00	17:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Clywedog Road S (Northern Arm)		ONE HOUR	✓	288	100.000
B - Clywedog Road E		ONE HOUR	✓	74	100.000
C - Clywedog Road S (Southern Arm)		ONE HOUR	✓	211	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To			
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
A - Clywedog Road S (Northern Arm)		0	6	282
B - Clywedog Road E		24	0	50
C - Clywedog Road S (Southern Arm)		196	15	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - Clywedog Road S (Northern Arm)	B - Clywedog Road E	C - Clywedog Road S (Southern Arm)
A - Clywedog Road S (Northern Arm)		0	20	6
B - Clywedog Road E		9	0	4
C - Clywedog Road S (Southern Arm)		10	25	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.09	6.67	0.1	A	46	69
B-A	0.07	10.88	0.1	B	22	33
C-AB	0.03	6.13	0.0	A	18	28
C-A					175	263
A-B					6	8
A-C					259	388

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APPENDIX B

WCBC SCOPING CORROSPONDENCE

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SCOPING CHECKLIST FOR: Wrexham Industrial Estate, Wrexham – Site 4

HIGHWAY AUTHORITY: Wrexham County Borough Council

DATE PREPARED: 14/05/18

Ref	Item	Intention	LHA Comments
1	Level of planning approval sought? e.g. outline, full.	Outline	
2	Size and description of development proposals	Site 4 – 46,500 sqft B1 – See Figure 1 in Appendix I for location of sites	
3	Description of existing land uses, existing trip distribution	Grassland– no existing trips assumed	
4	Does the development involve the relocation of an existing use?	No	
5	What transport based supporting documents will be produced?	Transport Statement only	Accepted
6	Are traffic surveys of the existing conditions available or required?	Whilst no capacity assessment is envisaged as part of the planning application for this site it is proposed to undertake the following traffic surveys as part of a data collection exercise for the other 5 planning applications to be submitted by FI Real Estate on WIE: Manual Classification Counts at: • Bridge Rd North / Redwither Rd (priority) • Clywedog Rd South / Clywedog Rd North (priority) • Clywedog Rd East / Clywedog Rd North (priority) • Bedwell Rd/Cefn Rd/Bridge Rd S (roundabout); • Clywedog Rd S/Bridge Rd S (roundabout); • Bridge Rd S/Clywedog Rd E (roundabout) • Bridge Rd/Spectrum Business park (roundabout) • Bridge Rd/Coed Aben Rd (priority)	Accepted

SCOPING CHECKLIST FOR: Wrexham Industrial Estate, Wrexham – Site 4

HIGHWAY AUTHORITY: Wrexham County Borough Council

DATE PREPARED: 14/05/18

		- Clywedog Rd S/Clywedog Rd E (priority) - Clywedog Rd N/Coed Aben Rd (priority) - Both access points to site 1 from Bridge Rd - ATC counts along Clywedog Rd S and Bridge Road S The location for the proposed traffic surveys are shown in Figure 1 in Appendix I. These locations have been agreed with highways prior to submission of this Scoping Note.	
7	Details of any other developments to be taken into account.	The other applications likely to be submitted by FI Real Estate on WIE include: - Site 1 - 13,500 sqft B2, 7,500 sqft B1, 10,000 sqft D2, 12,240 sqft A3, 9,500 sqft A1, 65 Bed C1 - Site 2 – 23,500 sqft B2/B8 - Site 3 – 44,500 sqft B2/B8 - Site 5 - land use and quantum of development tbc - Site 6 – 25,000 sqft B1, B2 0.73ha ecology zone See Figure 1 in Appendix I for site locations Please confirm if any other developments should be considered	Any proposed Transport Study will need to take into account the likely traffic generation for the NW Prison Site on Bridge Rd when it is fully operational. I understand that the prison is not yet operating at full capacity.
8	Details of any adjacent highway improvement proposals by others	Please advise if there are any highway improvement schemes that need to be taken account of.	Not aware of any relevant schemes.
9	When are the critical periods for assessments?	Weekday AM and PM peaks derived from surveys mentioned above.	Accepted
10	When would the site be fully operational?	2024 (assumed)	
11	What are the assessment years?	Transport Statement to be submitted, therefore no capacity assessment required as part of this application. A Technical Note will be produced detailing the combined effect of all 6 FI Real Estate applications. This Technical Note will have 2018 (base flows only) and 2024 (with and without development) as the	An assessment year 15 yrs. beyond opening will need to be reviewed.

SCOPING CHECKLIST FOR: Wrexham Industrial Estate, Wrexham – Site 4

HIGHWAY AUTHORITY: Wrexham County Borough Council



DATE PREPARED: 14/05/18

		assessment years.																												
12	Traffic growth factors?	Transport Statement to be submitted, no capacity assessment required as part of this application. A Technical Note will be produced detailing the combined effect of all 6 F1 Real Estate applications. This Technical Note will use TEMPRO growth will be used and manually adjusted with committed development (referenced in Point 7) removed from planning assumptions to remove double counting, with NTM adjustment applied (2018-2024).	An assessment year 15 yrs. beyond opening will need to be reviewed.																											
13	How will vehicular trip generation be derived for the proposal?	7.4.4. The vehicular trip rates and generation are represented in the table below: Industrial Warehousing –46500 sqft (B2) <table><tr><th rowspan="2">Time</th><th colspan="2">Arrivals</th><th colspan="2">Departures</th><th colspan="2">Total</th></tr><tr><th>Rate</th><th>Flow</th><th>Rate</th><th>Flow</th><th>Rate</th><th>Flow</th></tr><tr><td>08:00-09:00</td><td>0.385</td><td>17</td><td>0.094</td><td>4</td><td>0.479</td><td>21</td></tr><tr><td>17:00-18:00</td><td>0.056</td><td>2</td><td>0.426</td><td>18</td><td>0.482</td><td>21</td></tr></table> The TRICS output is attached in Appendix II <u>Please confirm acceptance of the above trip rates for the purposes of the assessment.</u>	Time	Arrivals		Departures		Total		Rate	Flow	Rate	Flow	Rate	Flow	08:00-09:00	0.385	17	0.094	4	0.479	21	17:00-18:00	0.056	2	0.426	18	0.482	21	Based on standard TRICs Data Locations, it is considered that Wrexham Industrial Estate (WIE) falls within either the “Neighbourhood Centre” or “Free Standing” location category. The submitted TRICs information relates to locations that are not considered to be comparable to WIE. Could you please re-submit TRICs information that falls within the above location categories.
Time	Arrivals			Departures		Total																								
	Rate	Flow	Rate	Flow	Rate	Flow																								
08:00-09:00	0.385	17	0.094	4	0.479	21																								
17:00-18:00	0.056	2	0.426	18	0.482	21																								
14	How will non-car mode trip generation be derived for the proposal?	Method of Travel to Work information is to be used from 2011 Census data, alongside the TRICS derived trips, to determine the likely number of non-car movements generated by the development.	Accepted																											
15	Would traffic from adjacent sites be attracted to the site? Pass-by traffic?	100% newly generated trips.	Accepted																											

SCOPING CHECKLIST FOR: Wrexham Industrial Estate, Wrexham – Site 4

HIGHWAY AUTHORITY: Wrexham County Borough Council

DATE PREPARED: 14/05/18

16	What is the assumed trip distribution?	Transport Statement to be submitted, no capacity assessment required as part of this application. A Technical Note will be produced detailing the combined effect of all 6 FI Real Estate applications. This Technical Note will distribute trips generated by the site in accordance with Journey to Work information derived from 2011 Census data.	Accepted
17	What is the extent of the accident study area to be considered?	See suggested study area in Figure 1 in Appendix I . Accident data will be obtained from WCBC for the most up to date five-year period. The proposed study area to include the expanse of the development area within WIE for inclusion in the above mentioned Technical Note. Reference will be made in this application to the Technical Note with regard to accidents that have occurred across the highway network in WIE	Accepted
18	Capacity tests required for the proposed and following existing junctions	Transport Statement to be submitted, therefore no capacity assessment required as part of this application. A Technical Note will be produced detailing the combined effect of all 6 FI Real Estate applications. This Technical Note will include a capacity assessment at key junctions within WIE.	Accepted
19	Are adjacent junctions or links likely to become overloaded?	Transport Statement to be submitted, therefore no capacity assessment required as part of this application. A Technical Note will be produced detailing the combined effect of all 6 FI Real Estate applications. This Technical Note will identify where junction improvements may be required.	Accepted
20	Is a new or modified highway access likely?	It is proposed that the site would be accessed via simple priority junctions from Clywedog Rd N, suggested access strategy of 7.3m wide access road, 10.0m kerb radii, as well as 2m footway along the site frontage to connect into existing footways south along Clywedog Rd E and north along Clywedog Rd N	Industrial accesses serving 16.5m long HGVs will normally require a 7.3m wide carriageway width with 15m kerb radii.
21	What are the visibility requirements? Are those requirements met?	<u>Comments welcome on suggested access arrangements at an early stage</u> Visibility splays of 4.5m x 120.0m in accordance with DMRB@40mph this being the prevailing speed limit on Clywedog Rd N	Accepted

SCOPING CHECKLIST FOR: Wrexham Industrial Estate, Wrexham – Site 4

HIGHWAY AUTHORITY: Wrexham County Borough Council

DATE PREPARED: 14/05/18

22	What level of car parking is required?	To be agreed at Reserved Matters stage, however, please advise on most current local guidance such that reference can be made in the Transport Statement	See LPGN 16 Guidance.
23	Are special provisions required for cyclists, pedestrians, those with a disability or public transport?	To be reviewed as part of the Transport Statement	Accepted.
24	What planning policy should the development comply with?	- Planning Policy Wales (Edition 7, July 2014); - North Wales Joint Local Transport Plan 2015; - Wrexham Local Development Plan2 (2013-2028); - Wrexham Unitary Development Plan 1996-2011; - WCBC LPG 16; - Wrexham connected: Urban Mobility Plan 2016 Please advise if any more documents should be taken into account.	
25	Are there any other special circumstances relevant to this proposal?	Please advise	

ATTACHMENTS: -

APPENDIX I

FIGURES

FIGURE 1 – SITE LOCATION, TRAFFIC SURVEY AND ACCIDENT STUDY AREA PLAN

APPENDIX II

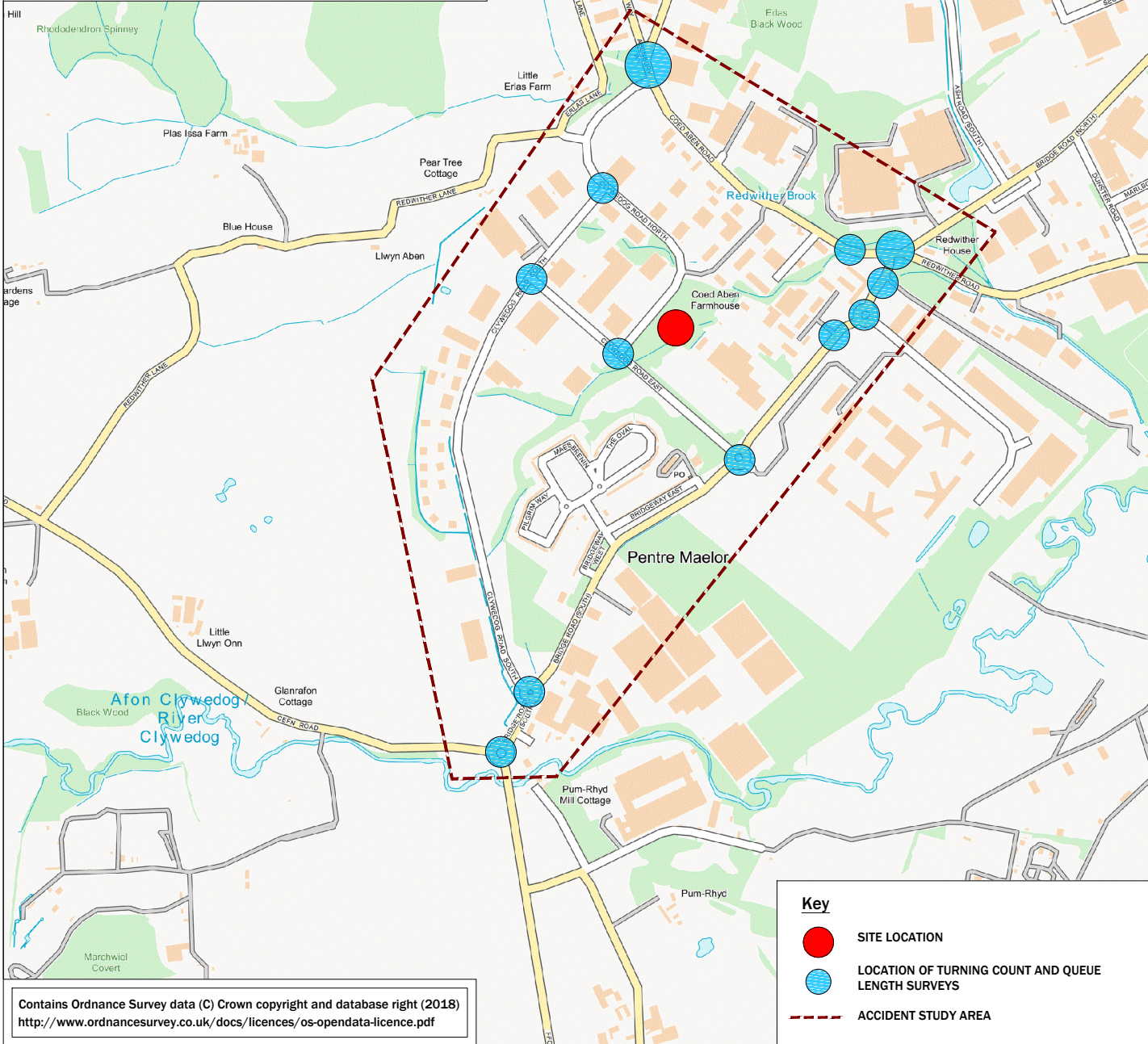
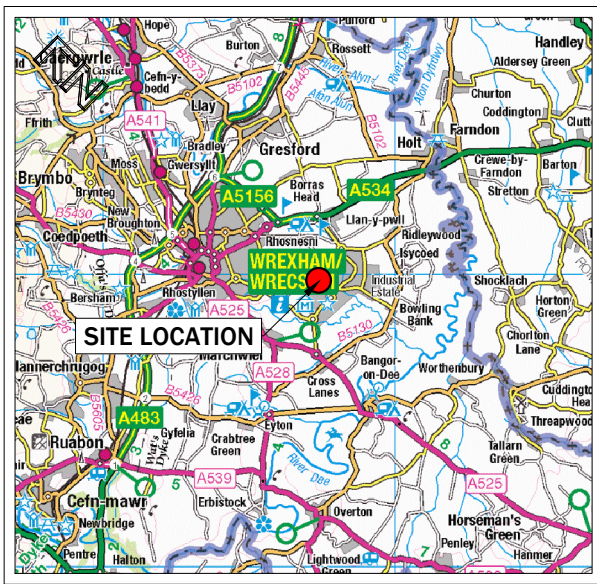
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APPENDIX C

FIGURE 1 – SITE LOCATION PLAN/ACCIDENT STUDY AREA

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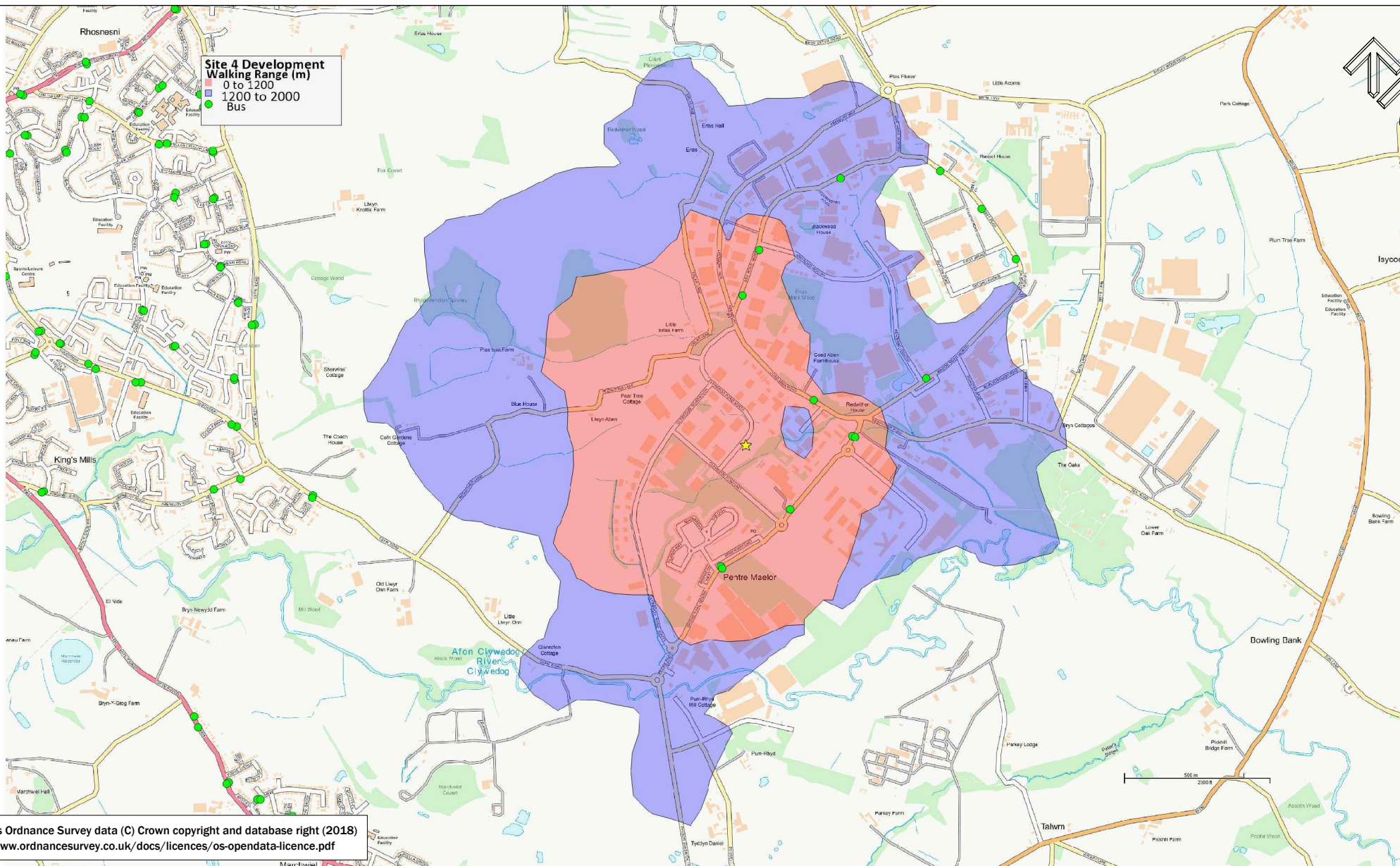
Contains Ordnance Survey data (C) Crown copyright and database right (2018)
<http://www.ordnancesurvey.co.uk/docs/licences/os-opendata-licence.pdf>

 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860	Project	WREXHAM INDUSTRIAL ESTATE - SITE 4		Drawn by VB	Issue date 21 NOV 2018
	Title	SITE, TRAFFIC SURVEY LOCATION PLAN & ACCIDENT STUDY AREA		Scale(s)	NTS
				Drawing No	FIGURE 1

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FIGURE 2 – WALKING ISOCHRONE

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*	*	*	*
Rev	Date	By	Revision notes
Status			
FINAL			

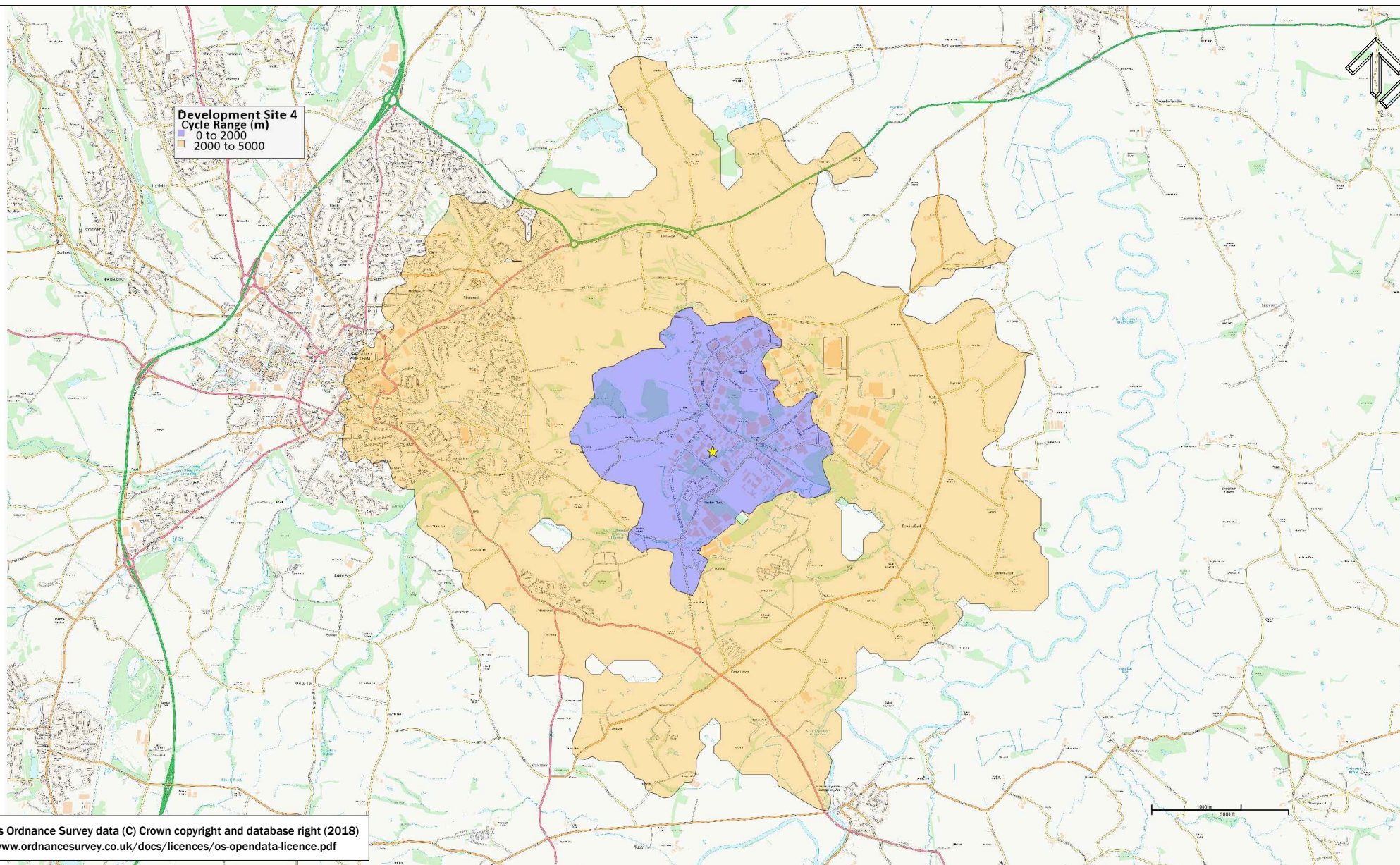
Project	WREXHAM INDUSTRIAL ESTATE - SITE 4
Title	WALKING ISOCHRON

Drawn by VB	Issue date 21 NOV 2018
Scale(s)	NTS
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FIGURE 3 – CYCLING ISOCHRONE

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*	*	*	*
Rev	Date	By	Revision notes
Status			
FINAL			

Project	WREXHAM INDUSTRIAL ESTATE - SITE 4
Title	CYCLING ISOCHRONE

Drawn by VB	Issue date 21 NOV 2018
Scale(s)	NTS
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FIGURE 4 – BUS JOURNEY TIME ISOCHRONE

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*	*	*	*
Rev	Date	By	Revision notes
Status			
FINAL			

Project	WREXHAM INDUSTRIAL ESTATE
Title	BUS JOURNEY TIME ISOCHRONES

Drawn by VB	Issue date 21 NOV 2018
Scale(s)	NTS
Drawing No	FIGURE 4

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APPENDIX D

ACCIDENT DATA

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Full Details Report Summary -

Accidents Found Date Range: 18/02/2016 - 18/02/2016

Grid Coordinate Range: 337057,348884 - 337057,348884

Accident Severity

	2016	Total
Serious	1	1
Total	1	1

Casualty Severity

	2016	Total
Serious	1	1
Total	1	1

Casualty KSI

	2016	Total
Adult KSI	1	1
Total	1	1

DATE 18/2/16

1.3 Accident Reference:U024022 Serious Unclassified Road CLWEDOG ROAD (SOUTH), WREXHAM Accident 1 of 1

1.7 Date & 1.9 Time.....Thursday 18/02/2016 15:10	1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....337057/348884	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Not at or within 20m of junction
1.12/1.13 1st road identity..U	1.17 Junction control.....
1.18/1.19 2nd road identity..	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties..1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Dry

Contributory Factors

Failed to look properly (Driver/Rider - Error)
Failed to judge other person's path/speed (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	Yes
Vehicle 001	Possible	Yes

Accident Description

VEH1 FAILED TO SEE PARKED VEH2 AND COLLIDED WITH REAR .

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Pedal Cycle	2.14 Hit object off c'way.None
2.10 Junction location..Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...North South	2.22 Driver age.....51
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not applicable
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Goods > 7.5t	2.14 Hit object off c'way.None
2.10 Junction location..Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...Parked Parked	2.22 Driver age.....50
2.7 Manoeuvres.....Parked	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....51	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Serious	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 01/03/2016 - 01/03/2016
Grid Coordinate Range: 337945,349519 - 337945,349519

Accident Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty KSI

	2016	Total
Slight	1	1
Total	1	1

DATA 1/3/16.

1.3 Accident Reference:U030106 Slight Unclassified Road BRIDGE ROAD, at its Junction with Accident 1 of 1
 1.7 Date & 1.9 Time.....Tuesday 01/03/2016
 1.11 Grid co-ordinates.....337945/349519
 1.10 Local Authority.....Wrexham
 1.12/1.13 1st road identity..U
 1.18/1.19 2nd road identity..U
 1.22 Weather.....Fine
 1.21 Light conditions.....Daylight
 1.20a Crossing(human).....No Human control within 50m
 1.20b Crossing(physical).....No crossing facility within 5
 1.15 Speed limit.....30 Mph
 1.14 Road type.....Single c'way
 1.16 Junction detail.....T or Staggered junction
 1.17 Junction control.....Stop sign
 1.24 Special conditions...None
 1.25 Carriageway hazards..None
 1.5 Number of vehicles...2
 1.6 Number of casualties.1
 1.23 Surface.....Wet

Contributory Factors

Participant Confidence Did a police officer attend?
 No - reported over the counter

Accident Description

VEH2 WAITING TO PULL OUT OF JUNCTION, VEH1 FAILED TO STOP IN TIME AND COLLIDED WITH REAR OF VEH2.

2 Vehicles

2.4 Veh ref no.....1
 2.17 Other vehicle.....2
 2.5 Vehicle class.....Van/Goods < 3.5t
 2.10 Junction location...Approaching or parked on approach
 2.9 Restricted location.On main carriageway
 2.8 Movement from/to....South North west
 2.7 Manoeuvres.....Going ahead other
 2.11 Skidding.....No
 2.13 Left c'way.....Did not leave c'way
 2.6 Towing.....No
 2.28 Foreign vehicle....Not foreign
 2.16 First impact.....Front
 2.12 Hit object in c'way..None
 2.14 Hit object off c'way.None
 2.18 Parts damaged..... / /
 2.21 Driver gender.....Male
 2.22 Driver age.....26
 2.27 Driver postcode.....
 2.24 Hit and Run.....No
 2.23 Breath test.....Not contacted
 2.29 Journey purpose.....Journey as part of work

2.4 Veh ref no.....2
 2.17 Other vehicle.....1
 2.5 Vehicle class.....Car
 2.10 Junction location...Approaching or parked on approach
 2.9 Restricted location.On main carriageway
 2.8 Movement from/to....South North west
 2.7 Manoeuvres.....Waiting to go ahead but held up
 2.11 Skidding.....No
 2.13 Left c'way.....Did not leave c'way
 2.6 Towing.....No
 2.28 Foreign vehicle....Not foreign
 2.16 First impact.....Back
 2.12 Hit object in c'way..None
 2.14 Hit object off c'way.None
 2.18 Parts damaged..... / /
 2.21 Driver gender.....Female
 2.22 Driver age.....37
 2.27 Driver postcode.....
 2.24 Hit and Run.....No
 2.23 Breath test.....Not contacted
 2.29 Journey purpose.....Other

1 Casualty

3.5 Cas ref no.....1
 3.6 Casualty class.....Passenger
 3.7 Gender.....Female
 3.8 Age.....59
 3.18 Casualty postcode...
 3.9 Severity.....Slight
 3.4 Vehicle no.....2
 3.12 Ped Direction.....Not a pedestrian
 3.15 Car passenger.....Front
 3.16 PSV passenger.....No
 3.14 Seat belt usage.....Worn but not independently
 3.19 School
 3.10 Pedestrian location..Not a pedestrian
 3.11 Pedestrian movement..Not a pedestrian
 3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 08/03/2016 - 08/03/2016

Grid Coordinate Range: 337110,349391 - 337110,349391

Accident Severity

	2016	Total
Serious	1	1
Total	1	1

Casualty Severity

	2016	Total
Serious	1	1
Total	1	1

Casualty KSI

	2016	Total
Adult KSI	1	1
Total	1	1

DATA 8/3/16

1.3 Accident Reference:U033578 Serious Unclassified Road CLYWEDOG ROAD SOUTH, at its Junction with Unclassified Road ENTRANCE TO TCB, Wrexham
 1.7 Date & 1.9 Time.....Tuesday 08/03/2016
 1.11 Grid co-ordinates.....337110/349391
 1.10 Local Authority.....Wrexham
 1.12/1.13 1st road identity..U
 1.18/1.19 2nd road identity..U
 1.22 Weather.....Fine
 1.21 Light conditions.....Daylight
 1.20a Crossing(human).....No Human control within 50m
 1.20b Crossing(physical).....No crossing facility within 5
 1.15 Speed limit.....30 Mph
 1.14 Road type.....Single c'way
 1.16 Junction detail.....Using private drive or entrance
 1.17 Junction control....Give way sign or uncontrolled
 1.24 Special conditions...None
 1.25 Carriageway hazards..None
 1.5 Number of vehicles...2
 1.6 Number of casualties.1
 1.23 Surface.....Dry

Contributory Factors

Too close to cyclist, horse or pedestrian (Driver/Rider - Error)
 Failed to look properly (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Very likely	Yes

Accident Description

VEH1 FAILED TO SEE VEH2 AHEAD AND COLLIDED WITH REAR CAUSING RIDER TO FALL TO GROUND.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Goods > 7.5t	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South North east	2.22 Driver age.....46
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Pedal Cycle	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South North east	2.22 Driver age.....76
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not applicable
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....76	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Serious	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 24/05/2016 - 24/05/2016

Grid Coordinate Range: 336113,348931-336113,348931

Accident Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty KSI

	2016	Total
Slight	1	1
Total	1	1

DATE 24/5/16

1.3 Accident Reference:U074389 Slight Unclassified Road CEFN ROAD, at its Junction with Accident 1 of 1
Unclassified Road REDWITHER LANE, WREXHAM
1.7 Date & 1.9 Time.....Tuesday 24/05/2016 14:09 1.15 Speed limit.....60 Mph
1.11 Grid co-ordinates.....336113/348931 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....Other Junction
1.12/1.13 1st road identity..U 1.17 Junction control....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...None
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight 1.5 Number of vehicles...3
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Disobeyed double white line (Driver/Rider - Injudicious)
Poor turn or manoeuvre (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	Yes
Vehicle 001	Possible	Yes

Accident Description

VEH 1 OVERTOOK VEH 2 A MOTORCYCLE ON SOLID WHITE LINES, SAW TRACTOR IN FRONT OF HIM, PULLED BACK IN A CLIPPED VEH
2 AS DOING SO. SLIGHT INJURIES TO MOTORCYCLIST

3 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east North west	2.22 Driver age.....33
2.7 Manoeuvres.....O/T moving vehicle on its O/S	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not requested
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Offside
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle > 500cc	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east North west	2.22 Driver age.....23
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not requested
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....3	2.16 First impact.....Did not impact
2.17 Other vehicle.....0	2.12 Hit object in c'way..None
2.5 Vehicle class.....Agric Veh	2.14 Hit object off c'way.None
2.10 Junction location...Cleared junction or parked at junc	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North west South east	2.22 Driver age.....48
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not requested
2.6 Towing.....Single Trailer	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....23	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 24/06/2016 - 24/06/2016

Grid Coordinate Range: 337178,348457 - 337178,348457

Accident Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty KSI

	2016	Total
Slight	1	1
Total	1	1

DATE 24/6/16

1.3 Accident Reference:U095448 Slight Unclassified Road REDWITHER LANE, WREXHAM INDUSTRIAL ESTATE Accident 1 of 1
1.7 Date & 1.9 Time.....Friday 24/06/2016 13:30 1.15 Speed limit.....30 Mph
1.11 Grid co-ordinates.....337178/348457 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....Not at or within 20m of junction
1.12/1.13 1st road identity..U 1.17 Junction control.....
1.18/1.19 2nd road identity.. 1.24 Special conditions...None
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight 1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

PUSHBIKE TRAVELLING FORWARD COLLIDED WITH VEH 1 HEAD ON CAUSING INJURY TO RIDER OF BIKE. RIDER OF VEH 1 FAILED TO PROVIDE DETAILS

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/Cycle Unknown cc	2.14 Hit object off c'way.None
2.10 Junction location...Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North west South east	2.22 Driver age.....36
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Pedal Cycle	2.14 Hit object off c'way.None
2.10 Junction location...Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east North west	2.22 Driver age.....22
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not applicable
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....22	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 04/11/2016 - 04/11/2016

Grid Coordinate Range: 337543,350312 - 337543,350312

Accident Severity

	2016	Total
Serious	1	1
Total	1	1

Casualty Severity

	2016	Total
Serious	1	1
Total	1	1

Casualty KSI

	2016	Total
Adult KSI	1	1
Total	1	1

DATE 4/10/16

1.3 Accident Reference:U167800 Serious Unclassified Road ASH ROAD NORTH, at its Junction Accident 1 of 1
with Unclassified Road ENTRANCE/EXIT FOR IPSEN,
WREXHAM INDUSTRIAL ESTATE
1.7 Date & 1.9 Time.....Friday 04/11/2016
1.11 Grid co-ordinates.....337543/350312
1.10 Local Authority.....Wrexham
1.12/1.13 1st road identity..U
1.18/1.19 2nd road identity..U
1.22 Weather.....Fine
1.21 Light conditions.....Daylight
1.20a Crossing(human).....No Human control within 50m
1.20b Crossing(physical).....No crossing facility within 5
1.14 Road type.....Single c'way
1.16 Junction detail.....Using private drive or entrance
1.17 Junction control....Give way sign or uncontrolled
1.24 Special conditions...None
1.25 Carriageway hazards..None
1.5 Number of vehicles...2
1.6 Number of casualties.1
1.23 Surface.....Dry

Contributory Factors

Loss of control (Driver/Rider - Error)
Careless/Reckless (Driver/Rider - Behaviour)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Possible	
Vehicle 001	Possible	Yes

Accident Description

VEH 2 HAS BEEN STATIONARY WAITING TO TURN INTO IPSEN ON INDUSTRIAL ESTATE. VEH 1 HAS BEEN TRAVELLING ALONG THE ROAD AT SPEED AND LOST CONTROL IMPACTING VEH 2 BEFORE RIDER HAS COME OFF BIKE AND SUSTAINED INJURIES.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle > 500cc	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South west North east	2.22 Driver age.....34
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North east South west	2.22 Driver age.....60
2.7 Manoeuvres.....Waiting to turn right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....34	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Serious	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 17/11/2016 - 17/11/2016

Grid Coordinate Range: 337293,348181 - 337293,348181

Accident Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty Severity

	2016	Total
Slight	1	1
Total	1	1

Casualty KSI

	2016	Total
Slight	1	1
Total	1	1

DATE 17/11/16.

1.3 Accident Reference:U174313 Slight Unclassified Road BEDWELL ROAD, at its Junction with Accident 1 of 1
Unclassified Road INDUSTRIAL ESTATE, WREXHAM
1.7 Date & 1.9 Time.....Thursday 17/11/2016 15:59 1.15 Speed limit.....60 Mph
1.11 Grid co-ordinates.....337293/348181 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....T or Staggered junction
1.12/1.13 1st road identity..U 1.17 Junction control....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...None
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight 1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Failed to look properly (Driver/Rider - Error)
Disobeyed give way or stop sign markings (Driver/Rider - Injudicious)
Failed to judge other person's path/speed (Driver/Rider - Error)
Distraction in vehicle (Driver/Rider - Impairment)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Very likely	
Vehicle 001	Very likely	Yes
Vehicle 001	Possible	

Accident Description

VEH 2 HAS BEEN TRAVELLING FROM THE DIRECTION OF WREXHAM INDUSTRIAL ESTATE TOWARDS CROSS LANES. VEH 1 HAS BEEN COMING OUT OF THE JUNCTION OF THE INDUSTRIAL ESTATE - UTILITIES CONNECTION MANAGEMENT - ONTO BEDWELL ROAD AND HAS PULLED OUT IN FRONT OF VEH 2 CAUSING AIRBAG TO BE DEPLOYED IN BOTH VEHICLES. VEH 2 DRIVER SUSTAINED MINOR INJURY, COMPLAINING OF CHEST PAIN.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Offside
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Cleared junction or parked at junc	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North east South east	2.22 Driver age.....36
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....Yes	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Female
2.8 Movement from/to....North west South east	2.22 Driver age.....37
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....Yes	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Female	3.14 Seat belt usage.....Worn but not independently
3.8 Age.....37	3.13 Headol pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 16/12/2015 - 16/12/2015

Grid Coordinate Range: 338762,349465 - 338762,349465

Accident Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty Severity

	2015	Total
Slight	2	2
Total	2	2

Casualty KSI

	2015	Total
Slight	2	2
Total	2	2

DATE - 16/12/15

1.3 Accident Reference: S191714 Slight Unclassified Road REDWITHER ROAD, at its Junction with Unclassified Road BRYN LANE, WREXHAM Accident 1 of 1
 1.7 Date & 1.9 Time.....Wednesday 16/12/2015 17:20 1.15 Speed limit.....40 Mph
 1.11 Grid co-ordinates.....338762/349465 1.14 Road type.....Single c'way
 1.10 Local Authority.....Wrexham 1.16 Junction detail.....T or Staggered junction
 1.12/1.13 1st road identity..U 1.17 Junction control....Give way sign or uncontrolled
 1.18/1.19 2nd road identity..U 1.24 Special conditions...None
 1.22 Weather.....Fine 1.25 Carriageway hazards..None
 1.21 Light conditions.....Dark/lights lit 1.5 Number of vehicles...2
 1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.2
 1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Failed to look properly (Driver/Rider - Error)
 Failed to judge other person's path/speed (Driver/Rider - Error)
 Careless/Reckless (Driver/Rider - Behaviour)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Possible	
Vehicle 001	Possible	
Vehicle 001	Possible	Yes

Accident Description

VEH1 & 2 TRAVELLING TOWARDS EACH OTHER, VEH1 HAS THEN TURNED RIGHT ACROSS PATH OF VEH2 CAUSING COLLISION.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east North east	2.22 Driver age.....45
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North west South east	2.22 Driver age.....56
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2 Casualties

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....45	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

3.5 Cas ref no.....2	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....56	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 14/09/2015 - 14/09/2015

Grid Coordinate Range: 338558,350255 - 338558,350255

Accident Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty KSI

	2015	Total
Slight	1	1
Total	1	1

DATE 14/9/15

1.3 Accident Reference: S140714 Slight Unclassified Road FIRST AVENUE, WXM IND. EST., at Accident 1 of 1
its Junction with Unclassified Road ABBEY ROAD,
1.7 Date & 1.9 Time.....Monday 14/09/2015 WREXHAM 1.15 Speed limit.....30 Mph
1.11 Grid co-ordinates.....338558/350255 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....T or Staggered junction
1.12/1.13 1st road identity..U 1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...Oil or diesel
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight 1.5 Number of vehicles...1
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties..1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Wet

Contributory Factors

Deposit on road e.g. oil, mud, chippings (Road Environment Contrib)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	Yes

Accident Description

VEH 1 TURNING RIGHT ONTO FIRST AVENUE FROM ABBEY ROAD. SEEN TO SLOW FOR THE JUNCTION. VEH 1 SLIDES ON A SMALL PATCH OF OIL ON GROUND AND SLIDES TO FLOOR

1 Vehicle

2.4 Veh ref no.....1	2.16 First impact.....Did not impact
2.17 Other vehicle.....0	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle 125 - 500cc	2.14 Hit object off c'way..None
2.10 Junction location...Leaving main road	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North west South west	2.22 Driver age.....39
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not provided
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....39	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 16/10/2015 - 16/10/2015

Grid Coordinate Range: 338892,350825 - 338892,350825

Accident Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty KSI

	2015	Total
Slight	1	1
Total	1	1

DATE - 16/10/15.

1.3 Accident Reference: S158489		Slight	Unclassified Road BRYN LANE, at its Junction with	Accident 1 of 1
			Unclassified Road RIDLEY WOOD ROAD, WREXHAM	
1.7	Date & 1.9 Time.....	Friday 16/10/2015 16:15	1.15 Speed limit.....	40 Mph
1.11	Grid co-ordinates.....	338892/350825	1.14 Road type.....	Single c'way
1.10	Local Authority.....	Wrexham	1.16 Junction detail.....	T or Staggered junction
1.12/1.13	1st road identity..	U	1.17 Junction control....	Give way sign or uncontrolled
1.18/1.19	2nd road identity..	U	1.24 Special conditions...	None
1.22	Weather.....	Fine	1.25 Carriageway hazards..	None
1.21	Light conditions.....	Daylight	1.5	Number of vehicles...2
1.20a	Crossing(human).....	No Human control within 50m	1.6	Number of casualties.1
1.20b	Crossing(physical)....	No crossing facility within 5	1.23	Surface.....
				Dry

Contributory Factors

Failed to look properly (Driver/Rider - Error)
Failed to judge other person's path/speed (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Very likely	Yes

Accident Description

VEH1 FAILED TO SEE ON COMING VEH2 AND PULLED OUT OF JUNCTION. VEH2 HAS THEN COLLIDED WITH OFFSIDE OF VEH1.

2 Vehicles

2.4	Veh ref no.....1		
2.17	Other vehicle.....2	2.16	First impact.....Offside
2.5	Vehicle class.....Car	2.12	Hit object in c'way..None
2.10	Junction location...Approaching or parked on approach	2.14	Hit object off c'way..None
2.9	Restricted location..On main carriageway	2.18	Parts damaged..... / /
2.8	Movement from/to....North east North west	2.21	Driver gender.....Female
2.7	Manoeuvres.....Turning right	2.22	Driver age.....37
2.11	Skidding.....No	2.27	Driver postcode.....
2.13	Left c'way.....Did not leave c'way	2.24	Hit and Run.....No
2.6	Towing.....No	2.23	Breath test.....Negative
2.28	Foreign vehicle....Not foreign	2.29	Journey purpose.....Commuting to/from work

2.4	Veh ref no.....2		
2.17	Other vehicle.....1	2.16	First impact.....Front
2.5	Vehicle class.....Pedal Cycle	2.12	Hit object in c'way..None
2.10	Junction location...Approaching or parked on approach	2.14	Hit object off c'way..None
2.9	Restricted location..On main carriageway	2.18	Parts damaged..... / /
2.8	Movement from/to...West South east	2.21	Driver gender.....Female
2.7	Manoeuvres.....Going ahead left hand bend	2.22	Driver age.....24
2.11	Skidding.....No	2.27	Driver postcode.....
2.13	Left c'way.....Did not leave c'way	2.24	Hit and Run.....No
2.6	Towing.....No	2.23	Breath test.....Not applicable
2.28	Foreign vehicle....Not foreign	2.29	Journey purpose.....Commuting to/from work

1 Casualty

3.5	Cas ref no.....1	3.15	Car passenger.....No
3.6	Casualty class.....Driver or Rider	3.16	PSV passenger.....No
3.7	Gender.....Female	3.14	Seat belt usage.....Not applicable
3.8	Age.....24	3.13	School pupil.....Other
3.18	Casualty postcode...	(3.19 School)	
3.9	Severity.....Slight	3.10	Pedestrian location..Not a pedestrian
3.4	Vehicle no.....2	3.11	Pedestrian movement..Not a pedestrian
3.12	Ped Direction.....Not a pedestrian	3.19	Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 30/11/2015 - 30/11/2015

Grid Coordinate Range: 337945,350816 - 337945,350816

Accident Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty KSI

	2015	Total
Slight	1	1
Total	1	1

DATE 30/11/15.

1.3 Accident Reference: S184595 Slight Unclassified Road ABENBURY WAY, at its Junction with Accident 1 of 1
ENTRANCE TO JCB, WREXHAM
1.7 Date & 1.9 Time.....Monday 30/11/2015 16:50 1.15 Speed limit.....30 Mph
1.11 Grid co-ordinates.....337945/350816 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....Using private drive or entrance
1.12/1.13 1st road identity..U 1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...None
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Dark/unknown 1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Wet

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

VEH2 FILTERING THROUGH TRAFFIC WHEN VEH1 PULLED OUT OF JUNCTION AND COLLIDED WITH VEH2 CAUSING RIDER TO FALL TO GROUND.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North East	2.22 Driver age.....59
2.7 Manoeuvres.....Turning left	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle 50 - 125cc	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....West East	2.22 Driver age.....20
2.7 Manoeuvres.....Waiting to go ahead but held up	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....20	3.13 School pupil.....Other
3.18 Casualty postcode..	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 23/12/2015 - 23/12/2015

Grid Coordinate Range: 337663,351968 - 337663,351968

Accident Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty KSI

	2015	Total
Slight	1	1
Total	1	1

DATA 23/12/15

1.3 Accident Reference: S195911 Slight A534, at its Junction with Unclassified Road HUGMORE Accident 1 of 1
 LANE ROUNDABOUT, WREXHAM
 1.7 Date & 1.9 Time.....Wednesday 23/12/2015 13:45 1.15 Speed limit.....50 Mph
 1.11 Grid co-ordinates.....337663/351968 1.14 Road type.....Roundabout
 1.10 Local Authority.....Wrexham 1.16 Junction detail.....Roundabout
 1.12/1.13 1st road identity..A534 1.17 Junction control....Give way sign or uncontrolled
 1.18/1.19 2nd road identity..U 1.24 Special conditions...None
 1.22 Weather.....Fine 1.25 Carriageway hazards..None
 1.21 Light conditions.....Daylight 1.5 Number of vehicles...2
 1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
 1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

TRAVELLING BACK FROM HOLT TOWARDS OSWESTRY. ARRIVED AT ROUNDABOUT ON THE A534 - NEW ROUNDABOUT FOR THE INDUSTRIAL ESTATE. VEH 2 WAS IN THE OFFSIDE LANE WITH VEH 1 ON THE INSIDE LANE. BOTH CARS STOPPED AT THE ROUNDABOUT. VEH 2 PULLED ONTO THE ROUNDABOUT IN OUTSIDE LANE TO GO STRAIGHT ON. VEH 1 STARTED COMING OUT OF HER LANE, VEH 2 BRAKED AND SOUNDED HORN. VEH 2 BUMPED INTO KERB TRYING TO AVOID VEH 1 AND CAME TO A COMPLETE STOP. VEH 1 HAS THEN CLIPPED NEARSIDE FRONT WING AND CARRIED ON DRIVING. VEH 2 HAS PURSUED TO OBTAIN VEHICLE DETAILS OF VEH 1

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Leaving roundabout	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Female
2.8 Movement from/to....East West	2.22 Driver age.....70
2.7 Manoeuvres.....Changing lane to right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....Yes
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Nearside
2.17 Other vehicle.....1	2.12 Hit object in c'way..Kerb
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Leaving roundabout	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....East West	2.22 Driver age.....63
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Worn but not independently
3.8 Age.....63	3.13 Ismedol pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 16/12/2015 - 16/12/2015

Grid Coordinate Range: 338762,349465 - 338762,349465

Accident Severity

	2015	Total
Slight	1	1
Total	1	1

Casualty Severity

	2015	Total
Slight	2	2
Total	2	2

Casualty KSI

	2015	Total
Slight	2	2
Total	2	2

DATE - 16/12/15

1.3 Accident Reference: S191714 Slight Unclassified Road REDWITHER ROAD, at its Junction Accident 1 of 1
with Unclassified Road BRYN LANE, WREXHAM
1.7 Date & 1.9 Time.....Wednesday 16/12/2015 17:20 1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....338762/349465 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....T or Staggered junction
1.12/1.13 1st road identity..U 1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...None
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Dark/lights lit 1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.2
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Failed to look properly (Driver/Rider - Error)
Failed to judge other person's path/speed (Driver/Rider - Error)
Careless/Reckless (Driver/Rider - Behaviour)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Possible	
Vehicle 001	Possible	
Vehicle 001	Possible	Yes

Accident Description

VEH1 & 2 TRAVELLING TOWARDS EACH OTHER, VEH1 HAS THEN TURNED RIGHT ACROSS PATH OF VEH2 CAUSING COLLISION.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east North east	2.22 Driver age.....45
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North west South east	2.22 Driver age.....56
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2 Casualties

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....45	3.13 School pupil.....Other
3.18 Casualty postcode..	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

3.5 Cas ref no.....2	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....56	3.13 School pupil.....Other
3.18 Casualty postcode..	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 08/01/2014 - 08/01/2014

Grid Coordinate Range: 337213,349530 - 337213,349530

Accident Severity

	2014	Total
Serious	1	1
Total	1	1

Casualty Severity

	2014	Total
Serious	1	1
Total	1	1

Casualty KSI

	2014	Total
Adult KSI	1	1
Total	1	1

DATE 8/1/14

1.3 Accident Reference:R003726 Serious Unclassified Road CLYWEDOG ROAD, at its Junction Accident 1 of 1
with Unclassified Road ENTRANCE TO APPLIED FACTORY
1.7 Date & 1.9 Time.....Wednesday 08/01/2014 17:15 1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....337213/349530 1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham 1.16 Junction detail.....Using private drive or entrance
1.12/1.13 1st road identity..U 1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...None
1.22 Weather.....Rain 1.25 Carriageway hazards..None
1.21 Light conditions.....Dark/lights lit 1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Wet

Contributory Factors

Defective lights or indicators (Vehicle Defects)
Failed to look properly (Driver/Rider = Error)

Participant	Confidence	Did a police officer attend?
Vehicle 002	Possible	
Vehicle 001	Possible	Yes

Accident Description

VEH1 PULLED OUT FROM GIVEWAY INTO PATH OF ON COMING VEH2 AND COLLIDED WITH SAME.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...North west South west	2.22 Driver age.....40
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Unknown
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle 125 - 500cc	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...South west North east	2.22 Driver age.....24
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Unknown
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....24	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Serious	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 26/03/2014 - 26/03/2014

Grid Coordinate Range: 338034,350858 - 338034,350858

Accident Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty KSI

	2014	Total
Slight	1	1
Total	1	1

DATA 26/3/14.

1.3 Accident Reference: R044784 Slight Unclassified Road ABENBURY WAY at House Name JCB, at Accident 1 of 1
its Junction with Unclassified Road HUGMORE LANE,
1.7 Date & 1.9 Time: Wednesday 26/03/2014 WREXHAM INDUSTRIAL ESTATE Speed limit: 30 Mph
1.11 Grid co-ordinates: 338034/350858
1.10 Local Authority: Wrexham 1.14 Road type: Single c'way
1.12/1.13 1st road identity: U 1.16 Junction detail: Roundabout
1.18/1.19 2nd road identity: U 1.17 Junction control: Give way sign or uncontrolled
1.22 Weather: Fine 1.24 Special conditions: None
1.21 Light conditions: Daylight 1.25 Carriageway hazards: None
1.20a Crossing (human): No Human control within 50m 1.5 Number of vehicles: 2
1.20b Crossing (physical): No crossing facility within 5 1.6 Number of casualties: 1
1.23 Surface: Dry

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

VEH 2 MOTORCYCLE WAS TRAVELLING AT SLOW SPEED ON THE OUTSIDE PASSING QUEUED VEHICLES ON ABENBURY WAY, WREXHAM INDUSTRIAL ESTATE TOWARDS A SMALL ROUNDABOUT WHEN VEH 1 SWERVED OUT KNOCKING THE RIDER OF VEH 2 OFF HIS MOTORCYCLE INTO THE ROAD. RIDER OF VEH 2 SUSTAINED INJURIES AND ATTENDED WREXHAM MAELOR.

2 Vehicles

2.4 Veh ref no: 1	2.16 First impact: Offside
2.17 Other vehicle: 2	2.12 Hit object in c'way: None
2.5 Vehicle class: Car	2.14 Hit object off c'way: None
2.10 Junction location: Approaching or parked on approach	2.18 Parts damaged: / /
2.9 Restricted location: On main carriageway	2.21 Driver gender: Not known
2.8 Movement from/to: South west North east	2.22 Driver age: -1
2.7 Manoeuvres: Going ahead other	2.27 Driver postcode:
2.11 Skidding: No	2.24 Hit and Run: Yes
2.13 Left c'way: Did not leave c'way	2.23 Breath test: Not contacted
2.6 Towing: No	2.29 Journey purpose: Other
2.28 Foreign vehicle: Not foreign	

2.4 Veh ref no: 2	2.16 First impact: Nearside
2.17 Other vehicle: 1	2.12 Hit object in c'way: None
2.5 Vehicle class: M/cycle 125 - 500cc	2.14 Hit object off c'way: None
2.10 Junction location: Approaching or parked on approach	2.18 Parts damaged: / /
2.9 Restricted location: On main carriageway	2.21 Driver gender: Male
2.8 Movement from/to: South west North east	2.22 Driver age: 56
2.7 Manoeuvres: O/T moving vehicle on its O/S	2.27 Driver postcode:
2.11 Skidding: No	2.24 Hit and Run: No
2.13 Left c'way: Did not leave c'way	2.23 Breath test: Not contacted
2.6 Towing: No	2.29 Journey purpose: Other
2.28 Foreign vehicle: Not foreign	

1 Casualty

3.5 Cas ref no: 1	3.15 Car passenger: No
3.6 Casualty class: Driver or Rider	3.16 PSV passenger: No
3.7 Gender: Male	3.14 Seat belt usage: Not applicable
3.8 Age: 56	3.13 School pupil: Other
3.18 Casualty postcode:	(3.19 School)
3.9 Severity: Slight	3.10 Pedestrian location: Not a pedestrian
3.4 Vehicle no: 2	3.11 Pedestrian movement: Not a pedestrian
3.12 Ped Direction: Not a pedestrian	3.19 Roadworker injured: No

Full Details Report Summary -

Accidents Found Date Range: 29/05/2014 - 29/05/2014

Grid Coordinate Range: 336429,349329 - 336429,349329

Accident Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty KSI

	2014	Total
Slight	1	1
Total	1	1

DATE - 29/5/14

1.3 Accident Reference: R079593 Slight Unclassified Road REDWITHER LANE, WREXHAM Accident 1 of 1

1.7 Date & 1.9 Time.....Thursday 29/05/2014 08:45	1.15 Speed limit.....60 Mph
1.11 Grid co-ordinates.....336429/349329	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Not at or within 20m of junction
1.12/1.13 1st road identity..U	1.17 Junction control.....
1.18/1.19 2nd road identity..	1.24 Special conditions...None
1.22 Weather.....Rain	1.25 Carriageway hazards...None
1.21 Light conditions.....Daylight	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties..1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Wet

Contributory Factors

Failed to judge other person's path/speed (Driver/Rider - Error)
Poor turn or manoeuvre (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 002	Very likely	
Vehicle 002	Possible	Yes

Accident Description

VEH 1 WAS TRAVELLING ALONG REDWITHER LANE TOWARDS THE INDUSTRIAL ESTATE, VEH 2 WAS TRAVELLING ALONG REDWITHER LANE TOWARDS ABENBURY. THEY HAVE MET AT A BLIND BEND ALONG REDWITHER LANE, VEH 1 HAS STOPPED HOWEVER VEH 2 HAS SKIDDED ALONG AND HIT INTO FRONT OF VEH 1

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South west North	2.22 Driver age.....21
2.7 Manoeuvres.....Going ahead left hand bend	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle 50 - 125cc	2.14 Hit object off c'way.None
2.10 Junction location...Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North South west	2.22 Driver age.....24
2.7 Manoeuvres.....Going ahead right hand bend	2.27 Driver postcode.....
2.11 Skidding.....Yes	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....24	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 08/07/2014 - 08/07/2014

Grid Coordinate Range: 338082,350867 - 338082,350867

Accident Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty KSI

	2014	Total
Slight	1	1
Total	1	1

DATE 8/7/14

1.3 Accident Reference: R103672 Slight Unclassified Road BRYN LANE, at its Junction with Accident 1 of 1
 Unclassified Road ASH ROAD NORTH, WREXHAM
 1.7 Date & 1.9 Time.....Tuesday 08/07/2014 10:45 1.15 Speed limit.....40 Mph
 1.11 Grid co-ordinates.....338082/350867 1.14 Road type.....Roundabout
 1.10 Local Authority.....Wrexham 1.16 Junction detail.....Roundabout
 1.12/1.13 1st road identity..U 1.17 Junction control.....Give way sign or uncontrolled
 1.18/1.19 2nd road identity..U 1.24 Special conditions...None
 1.22 Weather.....Other 1.25 Carriageway hazards..None
 1.21 Light conditions.....Daylight 1.5 Number of vehicles...1
 1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties..1
 1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Wet

Contributory Factors

Slippery road due to weather (Road Environment Contrib)
 Overloaded or poorly loaded vehicle/trailer (Vehicle Defects)
 Loss of control (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Possible	
Vehicle 001	Very likely	Yes
Vehicle 001	Very likely	Yes

Accident Description

DRIVER OF VEH 1 HAS APPROACHED CAMBERED ROUNDABOUT AT EITHER TOO HIGH A SPEED OR PASSED TOO CLOSELY FOR TURN CAUSING LOAD TO BE DISTURBED. ALTERNATIVELY, VEH 1 HAS BEEN OVERLOADED AND TOP HEAVY. MOMENTUM HAS THEN CAUSED VEHICLE TO TIP ONTO NEARSIDE THEREBY CAUSING INJURY TO DRIVER

1 Vehicle

2.4 Veh ref no.....1	2.16 First impact.....Nearside
2.17 Other vehicle.....0	2.12 Hit object in c'way..None
2.5 Vehicle class.....Goods > 7.5t	2.14 Hit object off c'way..None
2.10 Junction location...Mid junction	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east North east	2.22 Driver age.....27
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....Overturned	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Worn but not independently
3.8 Age.....27	3.19 School Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 22/07/2014 - 22/07/2014

Grid Coordinate Range: 337423,349899 - 337423,349899

Accident Severity

	2014	Total
Serious	1	1
Total	1	1

Casualty Severity

	2014	Total
Serious	1	1
Total	1	1

Casualty KSI

	2014	Total
Adult KSI	1	1
Total	1	1

DATA 22/7/14

1.3 Accident Reference:R112306 Serious Unclassified Road ABENBURY WAY, at its Junction with Accident 1 of 1
Unclassified Road CLYWEDOG ROAD NORTH, WREXHAM
1.7 Date & 1.9 Time.....Tuesday 22/07/2014
1.11 Grid co-ordinates.....337423/349899
1.10 Local Authority.....Wrexham
1.12/1.13 1st road identity..U
1.18/1.19 2nd road identity..U
1.22 Weather.....Fine
1.21 Light conditions.....Daylight
1.20a Crossing(human).....No Human control within 50m
1.20b Crossing(physical).....No crossing facility within 5
1.15 Speed limit.....30 Mph
1.14 Road type.....Single c'way
1.16 Junction detail.....Other Junction
1.17 Junction control.....Give way sign or uncontrolled
1.24 Special conditions...None
1.25 Carriageway hazards..None
1.5 Number of vehicles...1
1.6 Number of casualties..1
1.23 Surface.....Dry

Contributory Factors

Poor turn or manoeuvre (Driver/Rider - Error)
Loss of control (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Possible	Yes

Accident Description

VEH 1 TRAVELLING ALONG ABENBURY WAY. WEATHER GOOD, ROAD SURFACE GOOD AND DRY, TRAFFIC FLOW LIGHT. VEH 1 HAS COMMENCED MANOEUVRE TO TURN RIGHT. FOR UNKNOWN REASON RIDER OF VEH 1 HAS LOST CONTROL AND HAS FELL OFF HIS BIKE ONTO HARD TARMAC SURFACE

1 Vehicle

2.4 Veh ref no.....1	2.16 First impact.....Offside
2.17 Other vehicle.....0	2.12 Hit object in c'way..None
2.5 Vehicle class.....M/cycle 50 - 125cc	2.14 Hit object off c'way..None
2.10 Junction location...Mid junction	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North west South west	2.22 Driver age.....46
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....46	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Serious	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 12/08/2014 - 12/08/2014

Grid Coordinate Range: 337133,348430 - 337133,348430

Accident Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty KSI

	2014	Total
Slight	1	1
Total	1	1

DAIK-12/8/14

1.3 Accident Reference:R125637 Slight Unclassified Road BRIDGE ROAD SOUTH, at its Junction Accident 1 of 1
with Unclassified Road, WREXHAM
1.7 Date & 1.9 Time.....Tuesday 12/08/2014 08:30 1.15 Speed limit.....30 Mph
1.11 Grid co-ordinates.....337133/348430 1.14 Road type.....Roundabout
1.10 Local Authority.....Wrexham 1.16 Junction detail.....Roundabout
1.12/1.13 1st road identity..U 1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U 1.24 Special conditions...None
1.22 Weather.....Fine 1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight 1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m 1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5 1.23 Surface.....Dry

Contributory Factors

Participant Confidence Did a police officer attend?
No - reported over the counter

Accident Description

VEH 2 ENTERED FIRST ROUNDABOUT ON BRIDGE ROAD SOUTH OFF THE NEW ROAD (NAME NOT KNOWN) AS HE CARRIED ON OVER THE ROUNDABOUT A BLACK CAR HAS CLIPPED THE REAR WHEEL CAUSING HIM TO FALL OFF. DAMAGE TO BIKE AND INJURY TO RIDER

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Entering roundabout	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Female
2.8 Movement from/to....North west South east	2.22 Driver age.....61
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Pedal Cycle	2.14 Hit object off c'way..None
2.10 Junction location...Mid junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South North east	2.22 Driver age.....22
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not applicable
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....22	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 28/11/2014 - 28/11/2014

Grid Coordinate Range: 337952,350817 - 337952,350817

Accident Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty Severity

	2014	Total
Slight	1	1
Total	1	1

Casualty KSI

	2014	Total
Slight	1	1
Total	1	1

DATE - 28/11/14

1.3 Accident Reference: R186761 Slight Unclassified Road ABENBURY WAY, at its Junction with Accident 1 of 1
Unclassified Road ENTRANCE TO JCB, WREXHAM

1.7 Date & 1.9 Time.....Friday 28/11/2014 07:30	1.15 Speed limit.....30 Mph
1.11 Grid co-ordinates.....337952/350817	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Using private drive or entrance
1.12/1.13 1st road identity..U	1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..None
1.21 Light conditions.....Dark/lights lit	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties..1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Wet

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

VEH2 SIGNALLED TO TURN RIGHT WITH ARM EXTENDED, VEH1 THEN OVERTOOK AND CLIPPED ARM CAUSING RIDER TO FALL TO GROUND.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....East West	2.22 Driver age.....32
2.7 Manoeuvres.....O/T moving vehicle on its O/S	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not contacted
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Offside
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Pedal Cycle	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....East West	2.22 Driver age.....44
2.7 Manoeuvres.....Waiting to turn right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not applicable
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Not applicable
3.8 Age.....44	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 20/08/2013 - 20/08/2013

Grid Coordinate Range: 338970,350412 - 338970,350412

Accident Severity

	2013	Total
Serious	1	1
Total	1	1

Casualty Severity

	2013	Total
Serious	1	1
Total	1	1

Casualty KSI

	2013	Total
Adult KSI	1	1
Total	1	1

DATE 20/8/13

1.3 Accident Reference: P137323 Serious Bryn Lane Wrexham Industrial Estate, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time.....Tuesday 20/08/2013 07:46	1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....338970/350412	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Not at or within 20m of junction
1.12/1.13 1st road identity..U	1.17 Junction control.....
1.18/1.19 2nd road identity..	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Dry

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

V1 Travelling Along Bryn Lane (East) and Drove into Rear of Stationary H.G.V. which was Parked Up. Airbag Injuries to Driver V1 Causing Broken Nose and Cuts to Face

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North South	2.22 Driver age.....24
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Commuting to/from work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Goods > 7.5t	2.14 Hit object off c'way..None
2.10 Junction location...Not at junction	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....Parked Parked	2.22 Driver age.....37
2.7 Manoeuvres.....Parked	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Foreign - left hand drive	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....24	3.13 School pupil.....Other
3.18 Casualty postcode..	(3.19 School)
3.9 Severity.....Serious	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 24/08/2013 - 24/08/2013

Grid Coordinate Range: 337909,349373 - 337909,349373

Accident Severity

	2013	Total
Slight	1	1
Total	1	1

Casualty Severity

	2013	Total
Slight	1	1
Total	1	1

Casualty KSI

	2013	Total
Slight	1	1
Total	1	1

DATE 24/8/13

1.3 Accident Reference: P140239 Slight Bridge Road ,Wrexham Industrial Estate, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time.....Saturday 24/08/2013 12:39	1.15 Speed limit.....30 Mph
1.11 Grid co-ordinates.....337909/349373	1.14 Road type.....Roundabout
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Roundabout
1.12/1.13 1st road identity..U	1.17 Junction control....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..Animal in c'way
1.21 Light conditions.....Daylight	1.5 Number of vehicles...1
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Dry

Contributory Factors

Animal or object in carriageway (Road Environment Contrib)
Swerved (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Possible	Yes

Accident Description

it is Aledged That a Rabbit Has Ran into Carraigeway Causing Driver to Brake Harshly and Swerve to Avoid Animal.
Veh Has then Collided with Kerb.

1 Vehicle

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....0	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....South east South west	2.22 Driver age.....24
2.7 Manoeuvres.....Turning left	2.27 Driver postcode.....
2.11 Skidding.....Yes	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....Front
3.6 Casualty class.....Passenger	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Worn but not independently
3.8 Age.....25	3.19 School Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 24/09/2013 - 24/09/2013

Grid Coordinate Range: 337424,349953 - 337424,349953

Accident Severity

	2013	Total
Slight	1	1
Total	1	1

Casualty Severity

	2013	Total
Slight	1	1
Total	1	1

Casualty KSI

	2013	Total
Slight	1	1
Total	1	1

DATE - 24/9/13

1.3 Accident Reference: P158771 Slight Coed Aben Road J/W Ash Road North, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time.....Tuesday 24/09/2013 10:30	1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....337424/349953	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....T or Staggered junction
1.12/1.13 1st road identity..U	1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties..1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Dry

Contributory Factors

Failed to look properly (Driver/Rider - Error)
Failed to judge other person's path/speed (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Possible	Yes

Accident Description

Veh1 Approaching Junction Failed to See Veh2 ahead and Collided with Rear.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...North North west	2.22 Driver age.....25
2.7 Manoeuvres.....Turning left	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Back
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...North North west	2.22 Driver age.....33
2.7 Manoeuvres.....Waiting to turn left	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....33	3.13 School pupil.....Other
3.18 Casualty postcode..	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 31/01/2012 - 31/01/2012

Grid Coordinate Range: 337219,348614 - 337219,348614

Accident Severity

	2012	Total
Slight	1	1
Total	1	1

Casualty Severity

	2012	Total
Slight	2	2
Total	2	2

Casualty KSI

	2012	Total
Slight	2	2
Total	2	2

DATE - 31/1/12

1.3 Accident Reference: N015940 Slight Bridge Road South at House Name 'Linden' 3 Metres North of J/W Clywedog Road South, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time: Tuesday 31/01/2012 17:00 1.15 Speed limit: 40 Mph
 1.11 Grid co-ordinates: 337219/348614 1.14 Road type: Single c'way
 1.10 Local Authority: Wrexham 1.16 Junction detail: Other Junction
 1.12/1.13 1st road identity: U 1.17 Junction control: Give way sign or uncontrolled
 1.18/1.19 2nd road identity: U 1.24 Special conditions: None
 1.22 Weather: Fine 1.25 Carriageway hazards: None
 1.21 Light conditions: Daylight 1.5 Number of vehicles: 2
 1.20a Crossing (human): No Human control within 50m 1.6 Number of casualties: 2
 1.20b Crossing (physical): No crossing facility within 5 1.23 Surface: Dry

Contributory Factors

Following too close (Driver/Rider - Injudicious)
 Failed to judge other person's path/speed (Driver/Rider - Error)
 Sudden braking (Driver/Rider - Error)
 Careless/Reckless (Driver/Rider - Behaviour)

Participant	Confidence	Did a police officer attend?
Vehicle 002	Very likely	
Vehicle 002	Very likely	
Vehicle 001	Possible	Yes
Vehicle 002	Possible	

Accident Description

V1 Slows to Allow Unknown Vehicle out of Junction. V2 Travelling Behind, Fails to Slow and Collides with Rear of V1.

2 Vehicles

2.4 Veh ref no: 1	2.16 First impact: Back
2.17 Other vehicle: 2	2.12 Hit object in c'way: None
2.5 Vehicle class: Car	2.14 Hit object off c'way: None
2.10 Junction location: Approaching or parked on approach	2.18 Parts damaged: / /
2.9 Restricted location: On main carriageway	2.21 Driver gender: Female
2.8 Movement from/to: North east South west	2.22 Driver age: 38
2.7 Manoeuvres: Stopping	2.27 Driver postcode: LL143YE
2.11 Skidding: No	2.24 Hit and Run: No
2.13 Left c'way: Did not leave c'way	2.23 Breath test: Negative
2.6 Towing: No	2.29 Journey purpose: Other
2.28 Foreign vehicle: Not foreign	

2.4 Veh ref no: 2	2.16 First impact: Front
2.17 Other vehicle: 1	2.12 Hit object in c'way: None
2.5 Vehicle class: Car	2.14 Hit object off c'way: None
2.10 Junction location: Approaching or parked on approach	2.18 Parts damaged: / /
2.9 Restricted location: On main carriageway	2.21 Driver gender: Male
2.8 Movement from/to: North east South west	2.22 Driver age: 68
2.7 Manoeuvres: Going ahead other	2.27 Driver postcode: LL142HA
2.11 Skidding: No	2.24 Hit and Run: No
2.13 Left c'way: Did not leave c'way	2.23 Breath test: Negative
2.6 Towing: No	2.29 Journey purpose: Other
2.28 Foreign vehicle: Not foreign	

2 Casualties

3.5 Cas ref no: 1	3.15 Car passenger: No
3.6 Casualty class: Driver or Rider	3.16 PSV passenger: No
3.7 Gender: Female	3.14 Seat belt usage: Worn but not independently
3.8 Age: 38	3.13 Is a school pupil: Other
3.18 Casualty postcode: LL143YE	(3.19 School:)
3.9 Severity: Slight	3.10 Pedestrian location: Not a pedestrian
3.4 Vehicle no: 1	3.11 Pedestrian movement: Not a pedestrian
3.12 Ped Direction: Not a pedestrian	3.19 Roadworker injured: No
3.5 Cas ref no: 2	3.15 Car passenger: No
3.6 Casualty class: Driver or Rider	3.16 PSV passenger: No
3.7 Gender: Male	3.14 Seat belt usage: Worn but not independently
3.8 Age: 68	3.13 Is a school pupil: Other
3.18 Casualty postcode: LL142HA	(3.19 School:)
3.9 Severity: Slight	3.10 Pedestrian location: Not a pedestrian
3.4 Vehicle no: 2	3.11 Pedestrian movement: Not a pedestrian
3.12 Ped Direction: Not a pedestrian	3.19 Roadworker injured: No

Full Details Report Summary -

Accidents Found Date Range: 10/05/2012 - 10/05/2012

Grid Coordinate Range: 338804,349563 - 338804,349563

Accident Severity

	2012	Total
Slight	1	1
Total	1	1

Casualty Severity

	2012	Total
Slight	3	3
Total	3	3

Casualty KSI

	2012	Total
Slight	3	3
Total	3	3

DATE - 10/5/12

1.3 Accident Reference: N074812 Slight Bryn Lane Near Entrance to Bryn Cottages, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time.....Thursday 10/05/2012 16:00	1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....338804/349563	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Other Junction
1.12/1.13 1st road identity..U	1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties.3
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Dry

Contributory Factors

Participant	Confidence	Did a police officer attend?
		No - reported over the counter

Accident Description

Veh1 Has Turned across Path of Oncoming Veh2 and Collided with Same.

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Female
2.8 Movement from/to....South East	2.22 Driver age.....57
2.7 Manoeuvres.....Turning right	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to....North South	2.22 Driver age.....42
2.7 Manoeuvres.....Going ahead other	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle.....Not foreign	

3 Casualties

3.5 Cas ref no.....1	3.15 Car passenger.....Front
3.6 Casualty class.....Passenger	3.16 PSV passenger.....No
3.7 Gender.....Female	3.14 Seat belt usage.....Unknown
3.8 Age.....45	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

3.5 Cas ref no.....2	3.15 Car passenger.....Rear
3.6 Casualty class.....Passenger	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Unknown
3.8 Age.....46	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

3.5 Cas ref no.....3	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Female	3.14 Seat belt usage.....Unknown
3.8 Age.....57	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 13/09/2012 - 13/09/2012

Grid Coordinate Range: 338478,350393 - 338478,350393

Accident Severity

	2012	Total
Slight	1	1
Total	1	1

Casualty Severity

	2012	Total
Slight	1	1
Total	1	1

Casualty KSI

	2012	Total
Slight	1	1
Total	1	1

DATE 13/9/12

1.3 Accident Reference: N153059 Slight Bridge Road North J/W U, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time.....Thursday 13/09/2012 12:35	1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....338478/350393	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Junction - more than 4 arms
1.12/1.13 1st road identity..U	1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U	1.24 Special conditions...None
1.22 Weather.....Fine	1.25 Carriageway hazards..None
1.21 Light conditions.....Daylight	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties.1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Dry

Contributory Factors

Failed to signal/misleading signal (Driver/Rider - Error)
 Failed to judge other person's path/speed (Driver/Rider - Error)
 Failed to look properly (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Possible	
Vehicle 002	Very likely	
Vehicle 002	Possible	Yes

Accident Description

Veh1 About to Turn right when Veh 2 Overtook on Righthand Side, Veh 1 Collided with Veh 2

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Offside
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Female
2.8 Movement from/to...North east South west	2.22 Driver age.....49
2.7 Manoeuvres.....Stopping	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Left c'way Offside	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

2.4 Veh ref no.....2	2.16 First impact.....Nearside
2.17 Other vehicle.....0	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way.Road sign or signal
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location.On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...North South east	2.22 Driver age.....33
2.7 Manoeuvres.....O/T moving vehicle on its O/S	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Left c'way Offside	2.23 Breath test.....Negative
2.6 Towing.....No	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle.....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Female	3.14 Seat belt usage.....Unknown
3.8 Age.....49	3.13 School pupil.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....1	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

Full Details Report Summary -

Accidents Found Date Range: 31/10/2012 - 31/10/2012

Grid Coordinate Range: 337525,350538 - 337525,350538

Accident Severity

	2012	Total
Slight	1	1
Total	1	1

Casualty Severity

	2012	Total
Slight	1	1
Total	1	1

Casualty KSI

	2012	Total
Slight	1	1
Total	1	1

DATE 31/10/12

1.3 Accident Reference: N180888 Slight Abenbury Way, Wrexham Industrial Estate, Wrexham Accident 1 of 1

1.7 Date & 1.9 Time.....Wednesday 31/10/2012 17:50	1.15 Speed limit.....40 Mph
1.11 Grid co-ordinates.....337525/350538	1.14 Road type.....Single c'way
1.10 Local Authority.....Wrexham	1.16 Junction detail.....Other Junction
1.12/1.13 1st road identity..U	1.17 Junction control.....Give way sign or uncontrolled
1.18/1.19 2nd road identity..U	1.24 Special conditions...None
1.22 Weather.....Rain	1.25 Carriageway hazards..None
1.21 Light conditions.....Dark/lights lit	1.5 Number of vehicles...2
1.20a Crossing(human).....No Human control within 50m	1.6 Number of casualties..1
1.20b Crossing(physical).....No crossing facility within 5	1.23 Surface.....Wet

Contributory Factors

Poor turn or manoeuvre (Driver/Rider - Error)
Failed to look properly (Driver/Rider - Error)
Failed to judge other person's path/speed (Driver/Rider - Error)

Participant	Confidence	Did a police officer attend?
Vehicle 001	Very likely	
Vehicle 001	Possible	
Vehicle 001	Possible	Yes

Accident Description

V1 Has Turned left into Road and Due to Size of Vehicle Crossed over into Wrong Carriageway Remaining in it for Longer Than Needed. V2 Has Travelled Round left Hand Bend and Collided with V1

2 Vehicles

2.4 Veh ref no.....1	2.16 First impact.....Front
2.17 Other vehicle.....2	2.12 Hit object in c'way..None
2.5 Vehicle class.....Goods > 7.5t	2.14 Hit object off c'way..None
2.10 Junction location...Entering main road	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...West East	2.22 Driver age.....38
2.7 Manoeuvres.....Starting	2.27 Driver postcode.....
2.11 Skidding.....No	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Negative
2.6 Towing.....Double or multiple Trailer	2.29 Journey purpose.....Journey as part of work
2.28 Foreign vehicle....Foreign - left hand drive	

2.4 Veh ref no.....2	2.16 First impact.....Front
2.17 Other vehicle.....1	2.12 Hit object in c'way..None
2.5 Vehicle class.....Car	2.14 Hit object off c'way..None
2.10 Junction location...Approaching or parked on approach	2.18 Parts damaged..... / /
2.9 Restricted location..On main carriageway	2.21 Driver gender.....Male
2.8 Movement from/to...East West	2.22 Driver age.....20
2.7 Manoeuvres.....Going ahead left hand bend	2.27 Driver postcode.....
2.11 Skidding.....Yes & Overturned	2.24 Hit and Run.....No
2.13 Left c'way.....Did not leave c'way	2.23 Breath test.....Not provided
2.6 Towing.....No	2.29 Journey purpose.....Other
2.28 Foreign vehicle....Not foreign	

1 Casualty

3.5 Cas ref no.....1	3.15 Car passenger.....No
3.6 Casualty class.....Driver or Rider	3.16 PSV passenger.....No
3.7 Gender.....Male	3.14 Seat belt usage.....Worn but not independently
3.8 Age.....20	3.13 Road user status.....Other
3.18 Casualty postcode...	(3.19 School)
3.9 Severity.....Slight	3.10 Pedestrian location..Not a pedestrian
3.4 Vehicle no.....2	3.11 Pedestrian movement..Not a pedestrian
3.12 Ped Direction.....Not a pedestrian	3.19 Roadworker injured...No

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APPENDIX E

TECHNICAL DRAWING P18044-001B

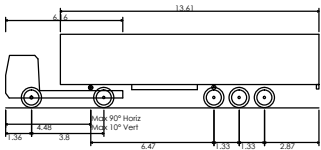
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TECHNICAL DRAWING P18044-002A

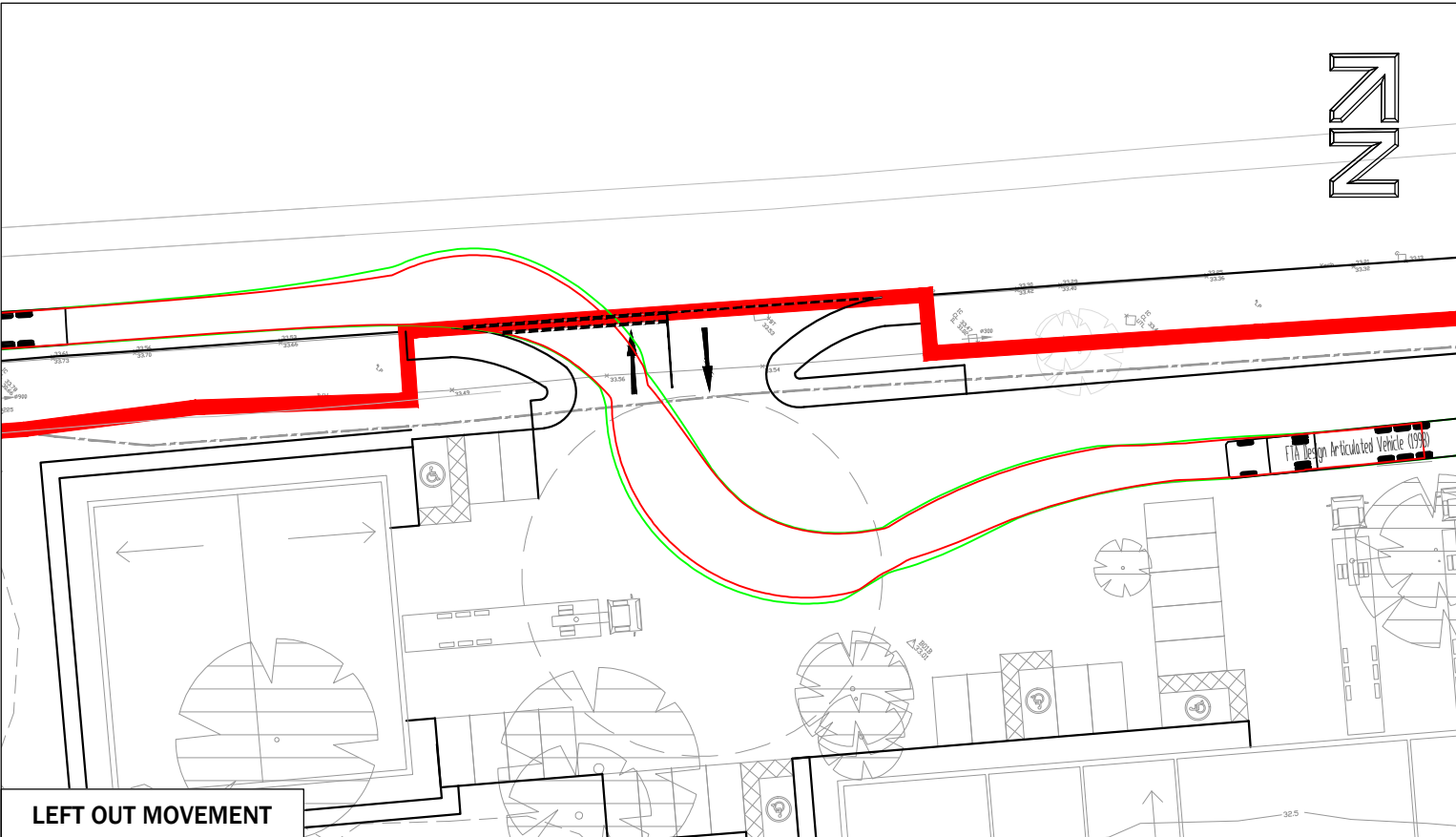
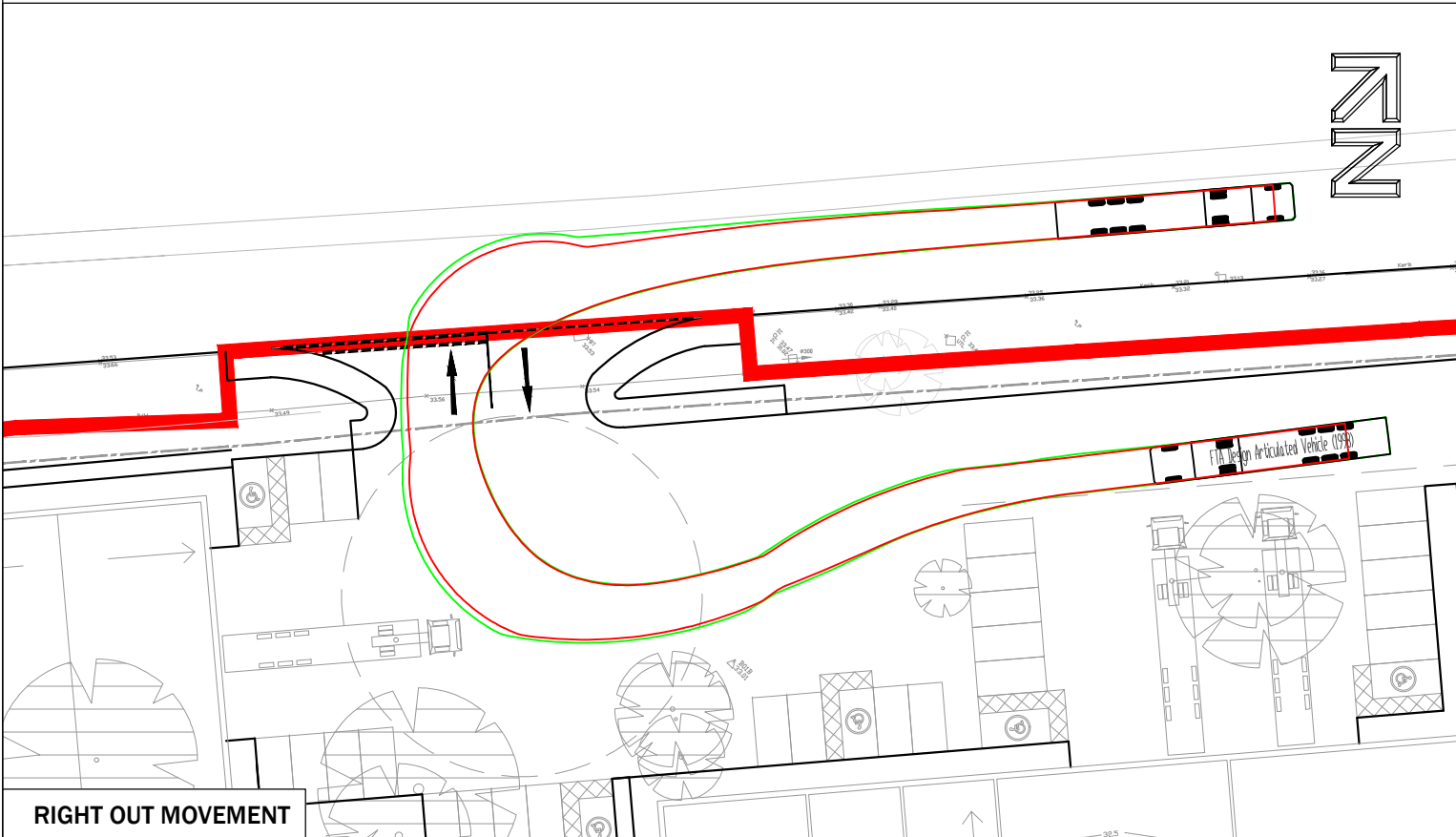
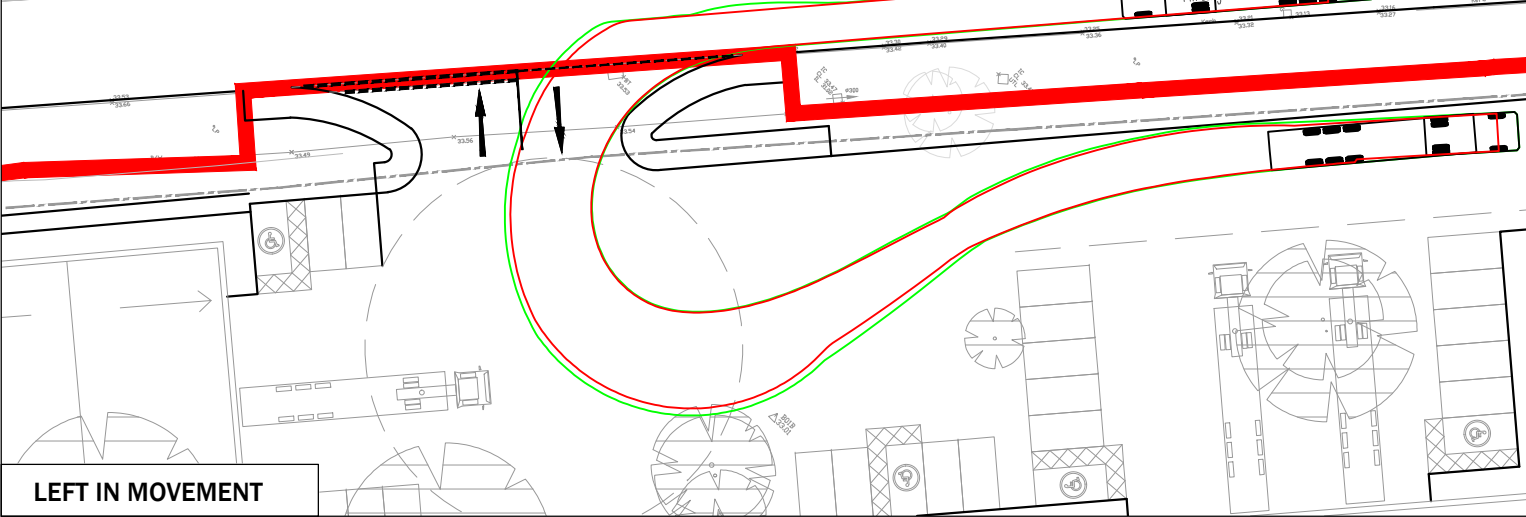
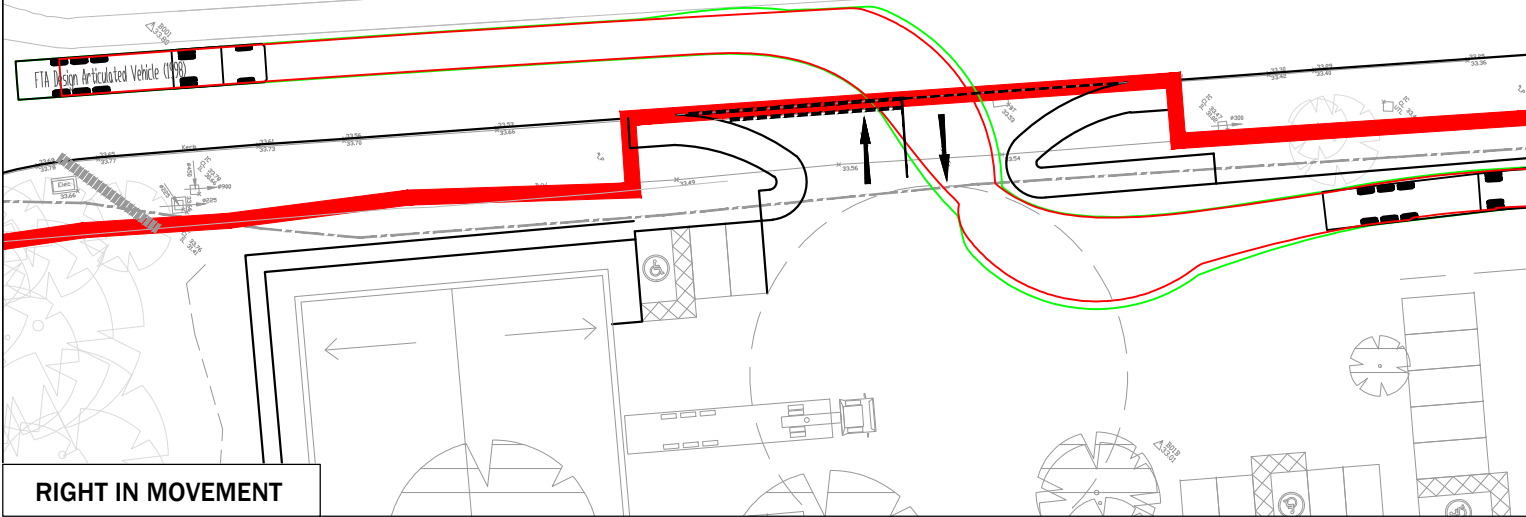
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VEHICLE PROFILE



FTA Design Articulated Vehicle (1998)

Overall Length 16.480m
Overall Width 2.550m
Overall Body Height 3.870m
Min Body Ground Clearance 0.515m
Max Track Width 2.470m
Lock to Lock Time 3.00s
Kerb to Kerb Turning Radius 6.550m



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A	20.11.18	VB	UPDATED TO SITE LAYOUT P4
Rev	Date	By	Revision notes
Status			
FOR INFORMATION			

Project	WREXHAM INDUSTRIAL ESTATE - SITE 4
Title	ACCESS SWEEP PATH ANALYSIS - ALL MOVEMENTS

Drawn by VB	Issue date 15 OCT 2018
Scale(s)	1:500 @A3
Drawing No	P18044-002A

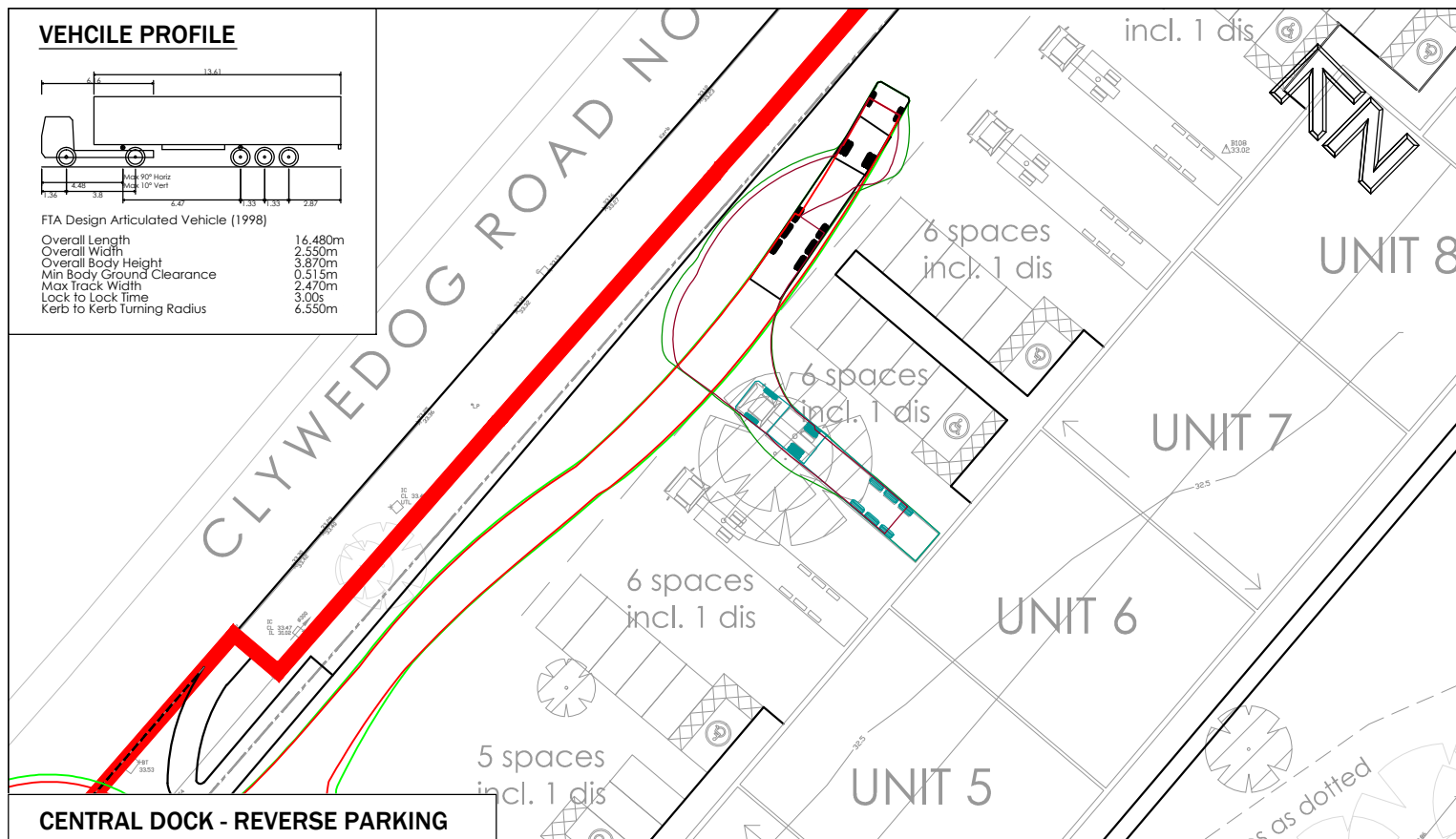
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TECHNICAL DRAWING P18044-003

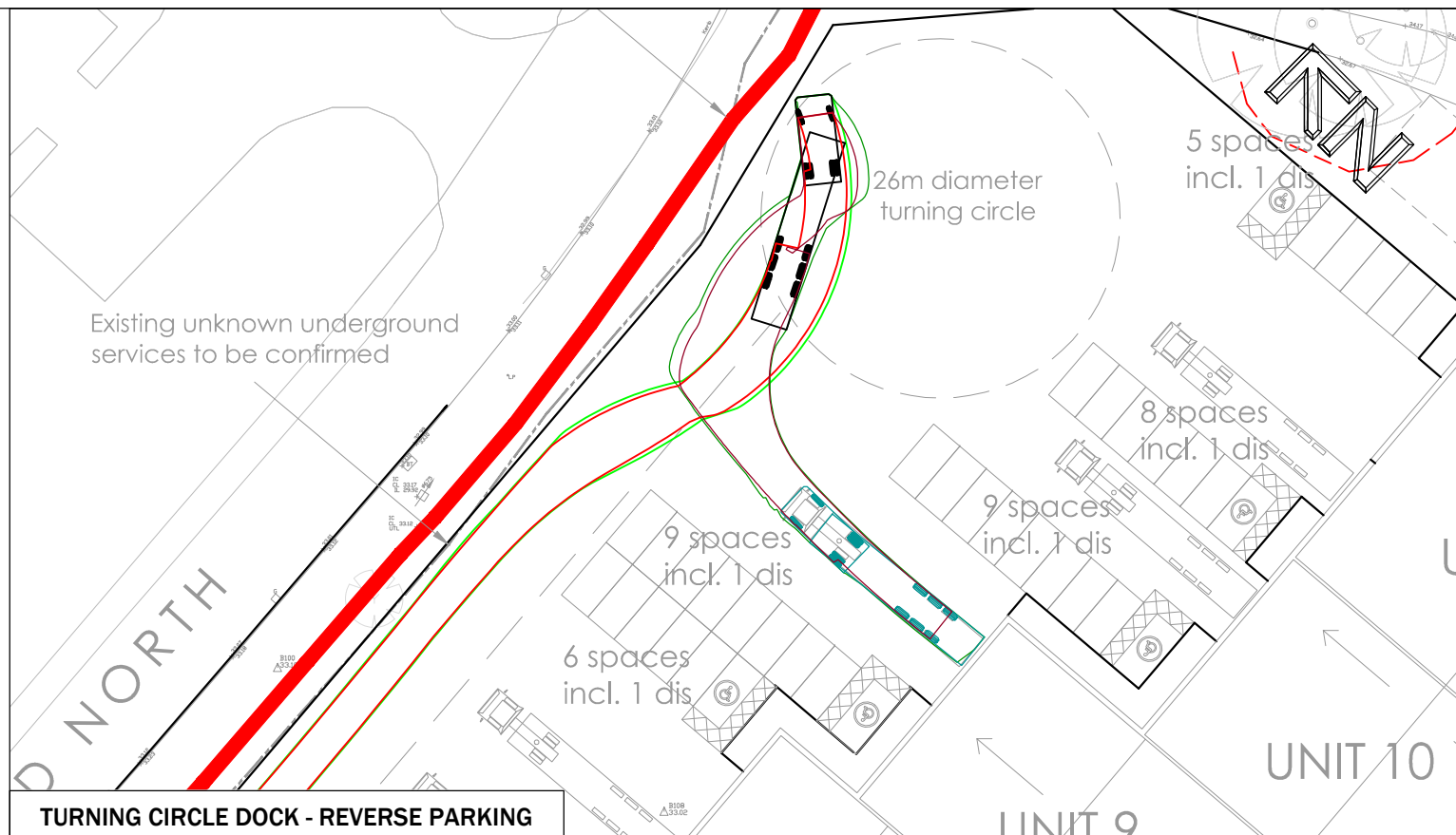
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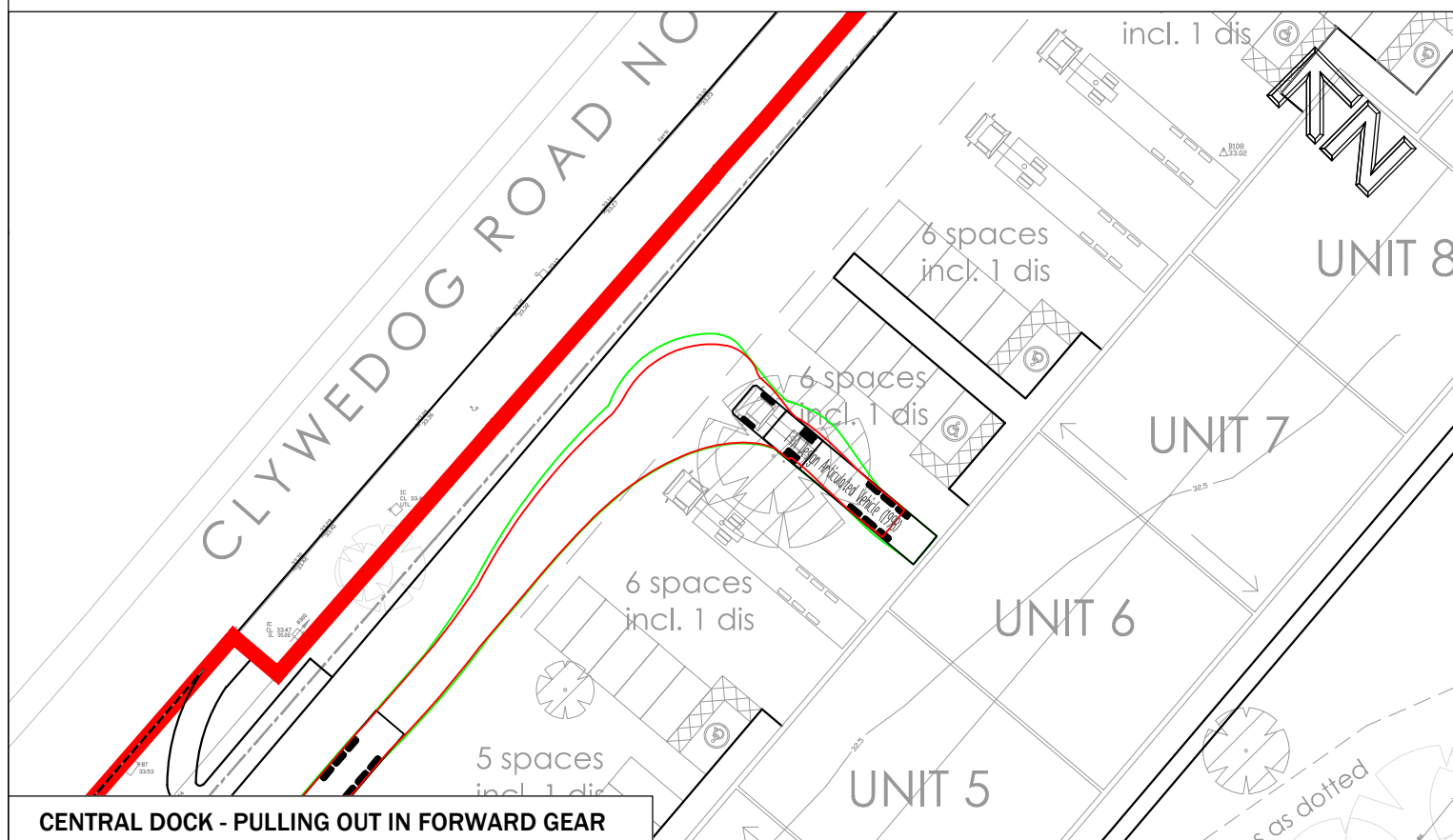
Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m



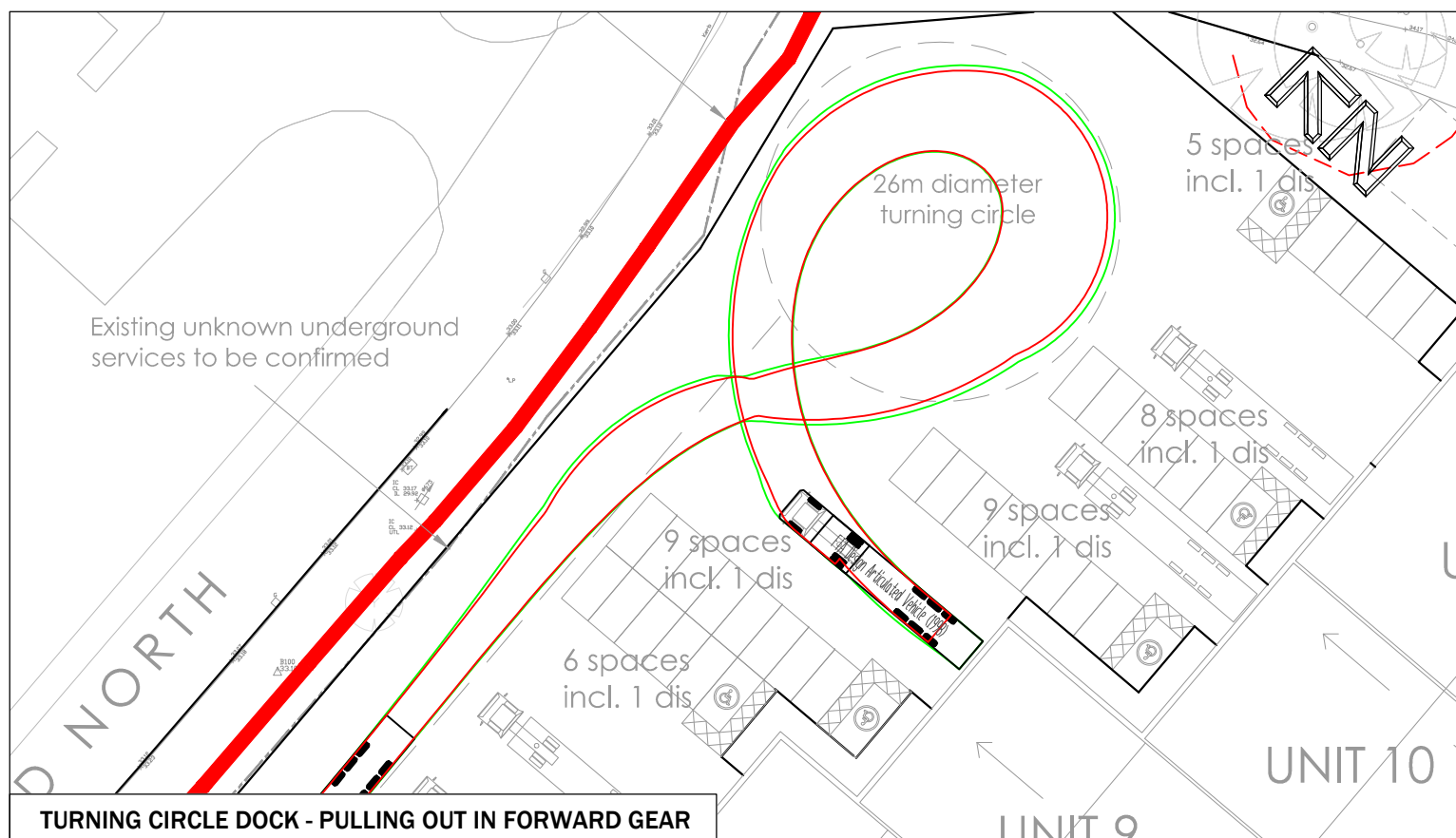
CENTRAL DOCK - REVERSE PARKING



TURNING CIRCLE DOCK - REVERSE PARKING



CENTRAL DOCK - PULLING OUT IN FORWARD GEAR



TURNING CIRCLE DOCK - PULLING OUT IN FORWARD GEAR



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Rev	Date	By	Revision notes
Status			

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WREXHAM INDUSTRIAL ESTATE - SITE 4

SWEPT PATH ANALYSIS

Issue date
15 OCT 2018

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P18044-003

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